A CATALOGUE

OF

THE MAMMALIA

IN

The Museum

OF

THE HON. EAST-INDIA COMPANY.

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Biology
Library

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THE ZOOLOGICAL MUSEUM of the East-India Company consists of specimens in all departments of the science, from the Company's oriental possessions, contributed by public servants who have been attached as Naturalists to Missions and Deputations on behalf of the Indian Government, or by gentlemen of the civil and military services, as presents to the Honourable Court of Directors.

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1819. Francis (Buchanan) Hamilton, M.D.—Drawings of Mammalia, Birds, and Reptiles.

Thomas Horsfield, M.D.—Collections of Mammalia, Birds, Reptiles, Fishes, and Insects from Java.

1820. Sir Thomas S. Raffles, Lieut.-Gov. of Fort Marlborough.—Collections of Mammalia, Birds, and Reptiles from Sumatra.

1821. Sir Thomas S. Raffles, Drawings of Mammalia and Birds from Sumatra.

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1824. John Pattison, Esq.—Several Mammalia.

Lieut.-Gen. Thomas Hardwicke.—A Collection of Mammalia, Birds, and miscellaneous Zoological Specimens.

1827. William Moorcroft, Esq.—Several Insects.

Capt. J. D. Herbert.—Specimens of Himalayan Birds, collected during his Geological Survey of the Himalayan Mountains.

1829. Madras Government.—Collections made by the Company's Naturalist at Fort St. George, consisting of specimens of Mammalia, Birds, and Insects.

1831. A. T. Christie, M.D.—Skull of the *Bibos cavifrons*, from the forests of Canara.

Colonel W. H. Sykes.—The Collections of Natural History made during the Statistical Survey of the Dukhun, consisting of specimens and descriptions of Mammalia, Birds, Fishes, Reptiles, and Insects.

1832. John George Children, Esq.—Specimens of Insects.

Nathaniel Wallich, Esq.—Skins of Mammalia and Birds from Nepal.

1833. John Reeves, Esq.—A specimen of *Ornithorhynchus paradoxus;* a collection of Skins of Birds from China; two specimens of Edible Birds'-nests from China.

Madras Government.—The Zoological Collections made by the late A. T. Christie, M.D., consisting of specimens in all classes of Zoology.

1837. John McClelland, Esq., Member of the Deputation to Assam for the purpose of investigating the culture of the Tea Plant:—Specimens of Mammalia, Birds, and other subjects of Natural History, with drawings and descriptions.

1838. Mrs. Impey.—Indian Reptiles in spirit.

1840. John William Helfer, M.D.—A collection of Mammalia and Birds from the coast of Tenasserim.

Major R. Boileau Pemberton.—Specimens of Mammalia, Birds, and Insects, collected during his Mission to Bootan, in 1837-38.

1841. J. T. Pearson, Esq.—A Collection of Insects from Darjeeling.

C. W. Smith, Esq.—A Collection of Insects from Chittagong.

The Asiatic Society of Bengal.—A Collection of Mammalia, Birds, and Insects.

John McClelland, Esq.—Specimens of Mammalia, Birds, and Insects.

1842. J. T. Pearson, Esq.—Specimens of Mammalia and Birds.

The Bengal Government.—The Entomological Collections made in Chusan by Theodor Cantor, M.D., acting as Naturalist, during the Chinese Expedition.

The Bengal Government.—A Collection of Birds, Fishes, Reptiles, and Shells, made by William Griffith, Esq., during the Expedition to Afghanistan.

The Bengal Government.—The continuation of the Collections made by Theodor Cantor, M.D., in Chusan, Canton, &c., consisting of Mollusca, and other subjects of Natural History.

J. T. Pearson, Esq.—A Collection of Insects from Darjeeling.

The Bengal Government.—The continuation of the Collections of Theodor Cantor, M.D., chiefly Crustacea, from Singapore and the China Sea.

1843. John McClelland, Esq.—A Collection of Mammalia, Birds, and Fishes.

The Bengal Government.—Mammalia and Birds collected by William Griffith, Esq., during the Expedition to Afghanistan.

Hugh Falconer, M.D.—A Collection of Birds from Northern India.

The Asiatic Society of Bengal.—A Collection of Mammalia and Birds.

William Griffith, Esq.—Specimens of Mammalia, Birds, Fishes, and Reptiles.

The Bombay Government.—The Zoological Collections made during the Mission of Sir W. C. Harris to Abyssinia, consisting of Mammalia, Birds, Insects, and other Zoological specimens.

1844. The Asiatic Society of Bengal.—Large Collections of Mammalia and Birds, with smaller Collections of Fishes, Reptiles, and Insects, received by several separate despatches during this year.

1845. B. H. Hodgson, Esq.—A large Collection of Mammalia and Birds from Nepal.

Matthew Lovell, Esq., Bengal Medical Service.—Several Mammalia and Birds.

J. Bax, Esq., through Colonel Barnwell.—A Collection of Birds.

1846. Colonel W. H. Sykes.—Specimens of the Black and other Corals, from the Persian Gulf.

The Asiatic Society of Bengal.—Large Collections of Mammalia, Birds, Fishes, and Reptiles, received by several despatches during this year.

1847. The Asiatic Society of Bengal.—Mammalia, Birds, and Crustacea.

The Rev. F. W. Hope.—Several Birds.

1848. B. H. Hodgson, Esq.—A Collection of Mammalia from Sikim and Darjeeling. (Containing several undescribed species.)

1849. Ezra T. Downes, Esq., Deputy Assay Master, Bombay Mint.—Large Collections of Coleopterous and Hymenopterous Insects, by several separate despatches.

Lieut. James W. J. Taylor.—A Collection of Shells from Singapore and the Indian Archipelago.

F. Moore.—A Collection of Coleopterous Insects.

Colonel F. Buckley.—A large Collection of Insects in all orders, from the Himalayas.

Colonel J. B. Hearsey.—A small series of Lepidoptera, received through J. O. Westwood, Esq.

1850. Capt. R. Strachey.—A large Collection of Mammalia and Birds, with skeletons of several of the subjects, from Ladakh and Kumaon.

Henry J. Carter, Esq., B.M.S.—A Collection of fresh-water Sponges.

Colonel W. H. Sykes.—A Collection of Reptiles, Insects, Mollusca, and miscellaneous Zoological specimens from the Dukhun, preserved in spirit.

1851. The Bombay Government.—Specimens of the Zoology of Mesopotamia, received from Commander Jones, of the Indian Navy, consisting of Birds, Reptiles in spirit, and a few Mammalia and Fishes.

THOMAS HORSFIELD.

Library, India-House,
August 18*th*, 1851.

CATALOGUE OF THE MAMMALIA

IN THE

MUSEUM OF THE EAST-INDIA COMPANY.

Class MAMMALIA.

Order I. PRIMATES.

Fam. SIMIADÆ.

Genus SIAMANGA, *Gray, Synopsis of the Br. Mus.*
SIMIÆ Species, *Linn. et al.* HYLOBATES, *Illiger et al.*

1. *SIAMANGA SYNDACTYLA, Raffles Sp.*
Simia syndactyla, *Raffles, Trans. Linn. Soc. XIII. p.* 241. 1822.
Simia syndactyla, *Horsfield, Zool. Research., with a figure.*
Hylobates syndactyla, *Appendix to Life of Sir T. S. Raffles*, p. 640. 1830.
Siamanga syndactyla, *Gray, Catal. Mamm. Br. Mus.*
SIAMANG of the natives of Sumatra.

HAB. Sumatra. According to Dr. Helfer, also Tenasserim.
Specimens A. B. C. presented by Sir T. S. Raffles.

The first authentic description of the Siamang was given by Sir T. S. Raffles, in the thirteenth volume of the Transactions of the Linnean Society, who briefly states as to its habits, that "a living specimen which he procured, was tame and tractable; in fact he was never happy but when allowed to be in company with some one." Mr. George Bennett (Wanderings, vol. II. p. 151, &c.) gives a copious account of his observations during a voyage from New South Wales to England, on a Siamang who was his fellow passenger; he describes the animal as intelligent, lively, very active, and capable of forming a strong attachment to certain individuals.

Genus HYLOBATES, *Illiger, Prodromus Syst. Mamm.* 1811.
SIMIÆ Species, *Linn. et al.*

2. *HYLOBATES HOOLOCK, Harlan Sp.*

Simia Hoolock, *Harlan, Trans. of the Amer. Phil. Soc. IV. New Series, p.* 52. 1830.

Hylobates Scyritus, *Ogilby, Proceed. Zool. Soc.* 1837, *and in Monkeys, &c. p. I. p.* 170. 1838.

Hylobates Hoolock, *Martin, Quadrumana*, 438. *McClelland, Proceed. Zool. Soc.* 1839, *p.* 148.

HOOLOOK, of the natives of Eastern India.

GOLOCK, DE VISMES, and other French Naturalists.

HAB. The Garrow and Kassiah hills, and the valley of Assam; also Aracan.

A. B. C. presented by the Asiatic Society of Bengal.

Dr. Burrough, of Philadelphia, who supplied the specimens from which Dr. Harlan's description was made (which he obtained during a residence in Assam, near the Garrow Hills, from Captain Alexander Davidson, of the Hon. E. I. Company's service, who was stationed at Goolpara, on the Burhampooter river), gives the most copious account of the habits of this Monkey hitherto made public; among other particulars, he states, "An adult male, with long canine teeth, became so tame and manageable, in less than a month, that he would take hold of my hand and walk with me. He would come at my call, and seat himself in a chair by my side at the breakfast-table, and help himself to an egg or wing of a chicken from my plate, without endangering any of my table furniture. In temper he was remarkably pacific, and seemed, as I thought, often glad to have an opportunity of testifying his affection and attachment for me. When I visited him in the morning, he would commence a loud and shrill whoo-whoo, whoo-whoo, which he would often keep up from five to ten minutes, with an occasional intermission for the purpose of taking a full respiration; until finally, apparently quite exhausted, he would lie down, and allow me to comb his head and brush the long hair on his arms. When I attempted to go away, he would catch hold of my arm or coat-tail, and pull me back again, to renew my little attentions to him."

This Monkey is also described and figured by Dr. Francis (Buchanan) Hamilton, in his MS. Catalogue of the Mammalia he observed in India. He states, "This animal is common in the forests on the left of the Brahmaputra." The native name is *Hulluk* or *Ullu*. On the habits

of the Hoolock in its wild state, Edward Blyth, Esq., gives many interesting details in the thirteenth volume of the Journal of the Asiatic Society of Bengal, pp. 464, 465.

3. *HYLOBATES VARIEGATUS, Müller, over de Zoogdieren von den Indischen Archipel., p.* 47. 1840.

Hylobates agilis, *Fred. Cuv., Mamm. lith. liv.* 32, *c. fig.*
Hylobates Rafflesii, *Geoff., Cours d'Hist. Nat. Lect.* 7, 1828.
Pithecus agilis, *Desmar., Mamm. Suppl. p.* 532. 1822.
Ungka-puti and Ungka-etam, *Raffles, Trans. Linn. Soc. XIII. p.* 242. 1822. *Zool. Journ. IV. p.* 106.

Hab. Sumatra.

A. B. presented by Matthew Lovell, Esq., Bengal Retired Medical Establishment.

Mr. Martin's remarks on the synonymy of the *Agile Gibbon* (Nat. Hist. of Monkeys, p. 425, &c.) tend to clear up much of the confusion in which it is enveloped; but while he considers the *Hylobates variegatus* of Kuhl (Beitr. p. 6, 2) as a variety of the *Simia lar* of Linnæus, Dr. Müller expresses a decided opinion that the *Hylobates agilis* of Fred. Cuvier, and the *Hylobates Rafflesii* of Geoffroy, may be united as synonyms of the *Hylobates variegatus* of Kuhl; in confirmation of which he states that the more recent descriptions of *Hylobates lar* refer to the black variety of *Hylobates variegatus*, the Ungka-etam. And he further points out the numerous and striking varieties of colour which are met with in this species, and which are so multifarious, that two individuals are rarely found which have the same covering.

The Ungkás, both the puti and the etam, possess in a high degree as well the favourable as the mischievous propensities of the Gibbons. Sir T. S. Raffles states, "that it is a general belief among the people of the country where it resides, that it will die of grief, if, when in captivity, the preference is given to another; in confirmation of which I may add, that one in my possession sickened under these circumstances, and did not recover until relieved from the cause of the vexation, by his rival, the Siamang, being removed into another apartment." M. Duvaucel informs us that the Ungka-puti usually lives in pairs, and possesses extraordinary activity; at the same time it is gentle and timid. The velocity of its movements is wonderful; it escapes like a bird on the wing. Scarcely does it perceive danger, but it is already far away. Ascending rapidly to the top of a tree, it then seizes a flexible branch, swings itself two or three times to gain the requisite

impetus, and then launches itself forward, repeatedly clearing in succession, without effort and without fatigue, spaces of forty feet. Mr. Martin (Quadrumana, p. 429) gives many interesting details of the history and habits of an individual of this species which lived some time in the menagerie of the Zoological Society of London.

Genus SEMNOPITHECUS, *Fred. Cuv. et al.*

SIMIÆ Species, *Linn. et al.* PRESBYTES, *Eschscholtz.*

4. *SEMNOPITHECUS ENTELLUS*, *Dufresne Sp.*

Simia entellus, *Dufresne, Bull. Soc. Philom.* 1797.

Semnopithecus entellus, *Fred. Cuv. et Geoffr., Mamm. lithog. fasc.* 47.

Simia entellus, *Fischer, Syn. Mamm.* 14.

HANUMAN of the Hindus. MAKUR of the Mahrattas.

HAB. The entire of India, from the Himalayas to Cape Comorin.

A. adult. Griffith's Collection.

B. nearly adult, and C. young. Presented by the Asiatic Society of Bengal.

The adult specimens in the Company's Museum have the usual colour of the animal, being ash-gray on the upper parts, darker on the shoulders and rump, grayish-brown on the tail, the hands slightly shaded with black. In the younger specimens the colour is stramineous or dingy-isabella, with a deeper tint of black on the hands. The intensity of the black colour of the hands varies considerably in different subjects at all ages. Above the eyebrows is a superciliary ridge of stiff black bristles projecting forwards, which, however, is a character observed in all species of Semnopithecus.

The external character of the Semnopitheci generally is concisely and appropriately given by Mr. E. T. Bennett, in "The Gardens and Menagerie of the Zoological Society," p. 83, in the following words:— "Their bodies are slightly made; their limbs long and slender; their tails of great length, considerably exceeding that of the body; their callosities of small size, and their cheek-pouches, in those species which appear to possess them, so inconsiderable, as scarcely to deserve the name." From Cercopithecus they are strikingly distinguished by the form of the last molar tooth in the lower jaw, which, instead of four, has five tubercles. The peculiar structure of the stomach in this genus has been described and illustrated by M. Otto and by Prof. Owen.

The *Hanuman* is found throughout the whole of India, from the Himalayas to Cape Comorin, and in some parts in great abundance.

While young, it is mild and gentle; as it advances in age it becomes sullen, distrustful, bold, and mischievous, committing extensive devastations in the gardens and plantations of the natives. French naturalists give the name erroneously as *Houlman*. By English naturalists it is generally written Hoonuman, but it should be pronounced Hănŭmāun, with the accent on the last syllable; the literal meaning being "Long-jaw." The Mahratta name in the Western Ghauts, according to Colonel Sykes, is *Makur*.

The *Lungoor* of the hill tribes is a distinct species, which will be described in the next article. Mr. Edward Blyth has contributed much information on the external habit and variations of colour of the Entellus, in different ages and localities. See vols. X. XII. XIII. and XVI. of the Journal of the Asiatic Society of Bengal.

Professor Wilson has kindly supplied the following valuable remarks on the ancient history of Hănŭmān, whose name is applied to the *Semnopithecus entellus*, and on the estimation in which this Monkey is now held by the Hindus.

Hanumán is called the son of *Pavana*, or the wind. He was one of the Monkeys of the Monkey kingdom in the southern forests, the king of which, *Báli*, was killed by *Rama*, who placed his (Báli's) brother, *Sugriva*, on the throne; thereon a numerous host of monkeys aided Rama in his invasion of Lanka or Ceylon. By their superhuman strength, ponderous rocks were cast into the sea opposite to Manar, and a bridge of rocks was formed. The rocks in the straits are still called Setabund-Rameswara, from the island Ramisseram, in which is a large temple dedicated to Rama. Hanumán particularly distinguished himself in the conflicts that ensued with Rávana's giants.

Hanumán is usually represented with the face of a black-faced monkey, but the figure of a man, except in the appendage of a very long tail, smooth, but terminating in a tuft of hair. He is reverenced as more than human, but there is no separate worship addressed to him. His figure, however, is usually found in the temples dedicated to Ramachandra, along with those of Rama and Sitá, and partakes of the veneration shown to them. The large black-faced Monkey, with a long tail, is called after Hanumán, by the same name, and is considered to be the type, not only of him, but of all Ráma's monkey allies. They are allowed unmolested access to the houses of the villagers, by whom they are petted and fed; and at some temples, in the west of India especially, large numbers of them come daily for food given them by the priests and the people. There is no other worship of them.

5. *SEMNOPITHECUS SCHISTACEUS*, *Hodgson, Jour. As. Soc. Beng. IX. p.* 1212.

Semnopithecus nipalensis, *Hodgs., Catal. of Mammalia, &c.*
Langoor or Lungoor of the natives at the foot of the Himalayas.
Mussoorie Lungoor, Captain Thomas Hutton, *Jour. As. Soc. Bengal, XIII. p.* 471.

Hab. The Himalayas.

A. adult, B. young. Presented by B. H. Hodgson, Esq.

This species, although nearly allied to the *Semnopithecus entellus*, is as fully entitled to a specific rank as several others of this genus, which have a place in all systematic catalogues. Mr. Hodgson gives the first authentic account of it in the ninth volume of the Journal of the Asiatic Society of Bengal, where it is characterized: "dark slaty above; below and entire head, pale yellow; hands, concolorous with the body, or very slightly darkened; tail, longer than the body, and very slightly tufted; hair, on the crown of the head short and radiated, on the cheeks long, directed back, and covering the ears." In a very old specimen, presented to the Company's Museum by Mr. Hodgson, the general colour is gray, inclining to hoary; in a younger individual it inclines to rufous; in both the head is nearly white, with a yellowish shade, exhibiting the distinguishing feature of this species in its covering. On the crown the hairs form a radiating cap: on the sides they are longer than in *Semnopithecus entellus*, entirely concealing the ears; on the sides and chin they are arranged circularly, like a beard.

This species was observed by Captain Thomas Hutton, who writes from the Himalayas to Mr. Blyth: "I fell in this morning with a whole lot of Monkeys, *Mussoorie Lungoors*, and took a leisurely survey of them; they were dark grayish, with pale hands and feet, white head, dark face, white throat and breast, and white tip to the tail. . . . . . I have long thought that the Lungoor of our parts must be distinct from the *Semnopithecus entellus* of Bengal, on account of the different locality in which they are found. . . . . . On the Simla side I observed them also, leaping and playing about, while the fir-trees, among which they sported, were loaded with snow-wreaths, at an elevation of 11,000 feet."—Jour. As. Soc. Beng. XIII. p. 471.

6. *SEMNOPITHECUS PRIAMUS*, *Elliot.*

Semnopithecus priamus, *Elliot. Blyth, Jour. Asiat. Soc. Beng. XIII.* 470, *XVI.* 732, *with a figure.*
The Hanuman of the Indian Peninsula in the south.

Hab. The Coromandel Coast and Ceylon.

A. Presented by the Asiatic Society of Bengal.

For the locality and peculiarities of this species I refer to Mr. Blyth's remarks in the volumes of the Journal of the Asiatic Society above cited. The colour is more uniformly gray than in the true *Semnopithecus entellus*, and the hands are concolorous with the body.

Note.—The three species of Semnopithecus last enumerated, resemble each other closely in many particulars, and further observations and comparisons are required to determine, with accuracy, their respective specific rank.

7. *SEMNOPITHECUS PILEATUS*, *Blyth*, *Jour. As. Soc. Bengal*, *XII. p.* 174, 5, *XIII.* 467, *XVI.* 735.

Hab. Chittagong, Tipperah, &c., eastward of the Ganges.

A. a nearly adult male. Presented by the Asiatic Society of Bengal.

The first indication of this species is given by Mr. E. Blyth, in June, 1843, in the Journal of the Asiatic Society of Bengal, XII. p. 174, 5, where a female specimen, not quite adult, is described. Mr. B. subsequently obtained other specimens, confirming the distinctness of the species; notices of these are given in vol. XIII. 467, and XVI. 735, of the same Journal.

On the specimen in the Company's Museum, which appears to be nearly an adult subject, the fur is long, soft, and silky. The colour above, on the thighs, and on the root of the tail, is gray, with a fulvous tint; darker near the head and on the shoulders; underneath, and on the inside of the extremities, it is lighter; on the breast it is of a deeper shade. The crown of the head, which is spacious, is densely covered with bristly hairs, regularly disposed, and somewhat elongated on the occiput, so as to resemble a cap, whence the appropriate name *pileatus*. Along the forehead is the superciliary crest of black bristles, directed forwards, resembling this character, as found in several allied species. Behind the ears is a small tuft of white hairs. The tail is long, darker near the end, and tufted. This species is, on the continent of India, the representative of the *Presbytes mitrata* of Eschscholtz, the *Semnopithecus mitratus* of Müller, or the *Semnopithecus comatus* of Desmarest. It has the same habit, and the cap-like or mitred covering of the head.

8. *SEMNOPITHECUS ARGENTATUS*, *Blyth MS.*

Hab. Not known.

A. young. Presented by the Asiatic Society of Bengal.

8 Probably young of S. obscurus

The only representative of this Semnopithec in the Company's Museum, is a specimen received from Calcutta with a large despatch from the Asiatic Society. In the list of the curator, it is enumerated with this name, and the specimen was ticketed with the same. It appears to be about half-grown. Its history and character are as yet doubtful, since it does not appear to be mentioned by Mr. Blyth in his various contributions to the Journal of the Asiatic Society, and it remains to be determined whether it be a distinct species, or a variety of some other. The fur is soft and lengthened. The general colour above is grayish-brown, darker on the shoulders, arms, and hands. The middle of the back and the thighs are of a lighter tint, with a silvery reflection in a certain light; hence the name *argentatus*. Underneath it is yellowish-white, and a large spot of the same colour extends from the orbit of the eyes towards the ears. On the top of the head is a vertical crest, and the superciliary ridge of black bristly hairs is also present. On the tail, the grayish colour of the back becomes lighter, with a stronger silvery gloss. The length of the head and body is one foot three and a half inches; that of the tail is the same.

9. *SEMNOPITHECUS JOHNII*, *Fischer Sp.*

Simia Johnii, *Fischer, Synopsis Mammalium, p.* 25.

Semnopithecus cucullatus, *Isidore Geoffroy, in Voyage de Belanger, Suppl.*

HAB. The southern parts of the Peninsula of India.

A. Presented by the late Dr. A. T. Christie, of Madras.

B. Presented by the Asiatic Society of Bengal.

M. John, formerly of the Danish factory, Tranquebar, gave the first description of this species in "Neue Schriften der Gesellsch, naturf. Freunde," I. p. 215, from a specimen discovered at Tellicherry. It has since been found on the Coromandel Coast, near Madras, and also in the interior of the Peninsula. It appears to be common in various localities, but little is known of its manners. Mr. E. Blyth, in his remarks on the Indian *Semnotes* (Journ. As. Soc. Beng. XII. p. 169), gives the following information on the authority of Mr. Jerdon. "The *Semnopithecus Johnii* is abundant in the dense woods of the Neilgherries, and in the forests on the sides of the hills. I have also seen it in the elevated district of the Wynaad, but only near the base of the Neilgherries. It associates as usual in small herds, leaps with amazing agility, and has a loud call like that of the *entellus*. The young are perfectly black, with hardly an indication of the light-coloured hair of

the hood of the adult. It is more suspicious and wary than the *entellus*, and never leaves the woods."

10. *SEMNOPITHECUS MAURUS*, *Schreber Sp.*

Simia maura, *Schreber, Saength. I. p.* 107, *t. xxii. B.*
Simia maura, *Gmel., Syst. Linn. I. p.* 35.
Semnopithecus maurus, *Müller, Monographisch overzicht van het Gesl. Semnopithecus, p.* 76.
Cercopithecus maurus, *Geoffroy, Ann. du Mus. XIX.* 1812.
Semnopithecus maurus, *Horsfield, Zool. Res. with a figure.*
Budeng, in the eastern districts of Java.
Lutung, in the western districts.
Lotong, of the natives of Sumatra.

Hab. Java exclusively, according to Dr. S. Müller. Its existence in Tenasserim is doubtfully indicated by Dr. Helfer.
A. and B. Horsfield's Collection from Java.

The *Semnopithecus maurus* has long been known to naturalists. It was figured at an early period by Edwards, with the name of "Middle-sized black Monkey" (Gleanings, pl. 311). Pennant describes it as the Negro-Monkey (Quadr. third edit. p. 206). In systems, it appears to be first mentioned by Gmelin in 1788, who refers to the *Simia maura* of Schreber's Saength. I. p. 107, t. xxii. B. Of species discovered in later years, the *Simia cristata* of Raffles, the *Semnopithecus pruinosus* of Desmarest, the Chingkau of the Malays, is most nearly related to the *maurus*. The characters by which the Chingkau is distinguished from the Budeng will be indicated in its description. "The Budeng is grave, sullen, and morose; it is found in abundance in the extensive forests of Java, where it forms its dwellings on trees, and associates in numerous societies. Troops, consisting of more than fifty individuals, are often found together. In meeting these monkeys, it is prudent to observe them at a distance. They set up loud screams at the approach of man, and, by the violent bustle and commotion excited by their movements, branches of decaying trees are not unfrequently detached and precipitated on the spectators. They are often chased by the natives for their fur, and great numbers are wantonly destroyed with cudgels and stones. The fur is simply dressed, in the European manner; it is jet black, silky, and usefully employed in riding equipages and military decorations. They are neglected and despised by the natives, as much time and patience are required to improve the natural sullenness of their temper. For many months they are grave and morose; and as they contribute nothing to amuse-

ment, they are seldom seen domesticated in villages and dwellings. When young, they feed on the tender leaves of plants or trees; and when adult, on wild fruits of every description."—(Horsfield's Researches in Java.)

11. *SEMNOPITHECUS PYRRHUS, Horsfield, Zoological Researches in Java, with a figure.*

Semnopithecus maurus, varietas flavescens, *Müller, Monographisch overzicht van het Gesl. Semnopithecus, p.* 58.

Lutung, of the Javanese.

Hab. Java.

A. and B. Horsfield's Collection from Java.

The *Semnopithecus pyrrhus* is classed by systematic writers of the present day, either as a variety of the *Semnopithecus maurus* of Schreber, or of the *Semnopithecus auratus* of Geoffroy; the former is the determination of Dr. S. Müller in the synonym above cited. As to the *Semnopithecus auratus* of Geoffroy, it appears from recent observations that it has been established on very imperfect materials, and Dr. Müller attempts to show (Monographisch overzicht, pp. 58 and 74) that the specimen described as *Semnopithecus auratus* is merely a variety, either of his *Semnopithecus chrysomelas* or *Semnopithecus sumatranus.* In my account of the *Semnopithecus pyrrhus,* published in 1824, I have stated that in my opinion the *Semnopithecus pyrrhus* could not be identical with *Semnopithecus auratus;* whether it be entitled to the rank of a distinct species, depends on further observations.

12. *SEMNOPITHECUS FEMORALIS, Horsfield, Appendix to Life of Sir T. S. Raffles,* 1830, p. 643.

Simia maura, *Linn.? Raffles, Trans. Linn. Soc. XIII. p.* 247, 1822, *omitting the locality given.*

The white-thighed Monkey, *Martin, Quadrumana,* 480.

Lotong of the natives of Sumatra.

Hab. Sumatra.

A. Presented by Sir T. S. Raffles.

The first specimens of this Semnopithec which were brought to England, formed part of the zoological collection made by Sir T. S. Raffles in Sumatra, during the years 1819 and 1820. In the catalogue of that collection, printed in the "Transactions of the Linnean Society," it is indicated as *Simia maura? Linn.,* although the locality assigned to it appears to be erroneous, since it belongs, so far as has yet been ascertained, exclusively to Sumatra. Sir T. S. Raffles' de-

scription closely applies to this species. In the "Appendix to the Memoir of the Life of Sir T. S. Raffles," p. 462, this species is first authoritatively made known as *Semnopithecus femoralis;* and, with this name, the specimens presented to the Museum at the India House, and to the Zoological Society, are distinguished. The most prominent characters are those detailed by Mr. Martin (Quadrumana, p. 480). "The general colour is black, fading on the top of the head, on the occipital tuft, on the back and shoulders into dusky brown; the hairs on the forehead project forward and are long; short white hairs are scattered over the chin; and the fore-arms are grizzled with white hairs, intermingled with black. The inside of the thighs are white, with an abrupt margin; and a white line runs down the chest and abdomen to its lower part. The sides of the face are not tufted, but a line of short black hairs occupies the malar bones. The skin of the face, ears, and palms is black."

Among the Semnopithecs collected in later years by the Dutch naturalists in Sumatra, there is a species very nearly allied to the *Semnopithecus femoralis,* which is described by Dr. S. Müller with the name of *sumatranus.* A comparison of the specimens contained in the Museum of the India Company, and that of the Zoological Society of London, with the figure given in the "History of the Mammalia of the Indian Archipelago," and "Monographisch overzicht van het Geslacht Semnopithecus," plate x. bis, as well as with Dr. Müller's description, shows the following peculiarities of the *Semnopithecus sumatranus:* the white colour of the inside of the thighs and legs is continued, uninterrupted and distinct, to the hands and feet; the underside of the tail, along two-thirds of its length, is purely white, while there is no indication of any white spots on the feet, neither do the hairs of the forehead project forward, as stated by Martin to be the case in the *S. femoralis.* The throat and abdomen have also a bright white colour. Dr. Müller states that he was long in doubt whether he should describe his species with the name of *femoralis;* and he would have adopted that name had Martin's description agreed more closely with the specimens of *sumatranus* in his collection. From our present knowledge, it appears that the *S. femoralis* is entitled to the same specific rank as *S. sumatranus,* but further information is required to determine whether they be really distinct, or mere local or accidental varieties.

13. *SEMNOPITHECUS FLAVIMANUS, Isidore Geoffroy, in Voyage de Belanger, Suppl.*

Simia melalophos, *Raffles, in Trans. Linn. Soc. XIII. p.* 245. 1822.

Semnopithecus melalophos, *Raffles. Appendix to the Life of Sir T. S. Raffles, p.* 642.

Semnopithecus flavimanus, *Müller, Monographisch overzicht over het Geslacht Semnopithecus*, p. 61.

SIMPAI, of the natives of Sumatra.

HAB. Sumatra.

A. Presented by Sir T. S. Raffles.

Sir T. S. Raffles discovered this species in Sumatra about the year 1819, and applied to it the appropriate name of *melalophos*, or "black-crested;" but this name is now given by systematic writers to another species which greatly resembles it, while the *S. melalophos* of Raffles is distinguished by the name of *flavimanus*. Mr. Martin (Quadrumana, p. 472) briefly explains the cause of the confusion in the synonymy of these two species, stating that "the naturalists of the Paris Museum conferred the title of *melalophos* upon another species, also from Sumatra, and regarded by them as identical with the species described by Raffles, which latter, when it came into their hands, M. Isidore Geoffroy perceived to be distinct from the former, the *S. melalophos* of French naturalists; and accordingly described it in the 'Supplement to Belanger's Voyage,' under the name of *flavimanus*, which decision has been adopted by mammalogists generally."

Both species, the *melalophos* and *flavimanus*, agree entirely in external habit, physiognomy, and relative proportion of extremities and tail; the only difference consists in the colour of the hairy covering; the *S. flavimanus* is more diversified, the contrast between the upper and lower parts is greater, the former has a yellowish rufous tint, washed with blackish, the lower parts are nearly white. In the *melalophos*, the colour is more fulvous-red above, while the underside is nearly yellow. In both, the frontal crest is vertical, and streaked with black.

Sir T. S. Raffles states that the Simpai is frequent in the neighbourhood of Bencoolen, on the west coast of Sumatra, while the Dutch naturalists found the same species exclusively at Indrapura, a few hundred miles further north on the same coast. They never met the *melalophos* and *flavimanus* in the same localities, but they live respectively in separate companies. By the natives, the name of Simpai is given to both species.

Regarding the *melalophos*, Dr. Müller remarks: "We observed the Simpai as well in the thick forests covering the mountains, as in the plains along the seashore, but never at an elevation exceeding 3,000 feet above the level of the ocean. He is cautious and cunning, and at

the same time extremely swift in his motions. He is rarely seen alone, but mostly in small companies of six, eight, or twelve individuals. His cry resembles that of the *S. mitratus,* but is more continuous, so that it nearly sounds as hoe-ikikikikikik. His cheerful chattering is chiefly heard at the earliest dawn of the day or at twilight, and during our solitary excursions through the forests, the silence of midnight, when the moon shone bright, was occasionally enlivened by the cry of the Simpai sounding through the forest; and as he selects for his favourite resting-place the borders of brooks rushing through deep ravines, this contributes to increase the reverberating echo. During the day, the Simpai rambles through the forests, frequenting the tops of those trees that produce his favourite food."—(Monogr. overzicht van het Gesl. Semnopithecus, p. 66.)

14. *SEMNOPITHECUS CRISTATUS*, *Raffles Sp.*

Simia cristata, *Raffles, Trans. Linn. Soc. XIII. p.* 244. 1822.
Semnopithecus cristatus, *Appendix to Life of Sir T. S. Raffles, p.* 642. 1830.
Semnopithecus cristatus, *Müller, Monographisch overzicht over het Gesl. Semnopithecus, p.* 77.
Semnopithecus pruinosus, *Desmarest, Mamm. Supp. p.* 533.
Chingkau, of the natives of Sumatra.

Hab. Sumatra and Borneo.

A. Presented by Sir T. S. Raffles.

The first authentic description of the Chingkau is given by Sir Stamford Raffles, in the thirteenth volume of the "Transactions of the Linnean Society." It is found in Sumatra, Borneo, and probably in other islands of the Eastern Archipelago, in which it represents the Lutung of the Javanese. Although nearly allied to that species, it differs in the colour of its hairy covering, in external form, and in the localities which it inhabits. The general colour is not intensely black, but silvery or hoary; hence the name given by Desmarest, *pruinosus.* Mr. Martin enumerates the peculiarities of its external form. "It is," he states, "in comparison with the Lutung, a more slender animal, having the ears large and exposed, and a long peaked vertical crest." In describing the Chingkau, Dr. Müller observes: "Although nearly allied to the *S. maurus,* he differs in several particulars; he selects for his abode low situations, especially such as are marshy, and abounding with water. Here he is mostly found near the banks of rivers, and in situations producing the Nibong-palm (*Oncosperma*

filamentosa) in abundance, the fruit of which is his most favourite food. We never met with the Chingkau in the more elevated ridges. The small companies which we encountered in Borneo, were in localities not exceeding a few hundred feet above the ocean; and in Sumatra, we found him alone on the alluvial plains at the foot of the ridge extending along the sea-shore."

"The Chingkau is cautious, cunning, and possesses a remarkable dexterity to conceal himself from his pursuers. His cry resembles that of the *S. maurus*, but is not so full. His motions in the tops of the trees resemble those of the common Marten."—(Monogr. Overzicht, &c. pp. 77, 78.)

Genus SEMNOPITHECUS, *Fred. Cuv.*

General List of Species enumerated by Zoological writers in 1848.

I. From Continental India.

1. Semnopithecus entellus, *Dufresne Sp.*
2. Semnopithecus schistaceus, *Hodgson, Jour. As. Soc. Beng. IX. p.* 1212, *X. p.* 907.
3. Semnopithecus pileatus, *Blyth, Jour. As. Soc. Beng. XII. p.* 174, 5, *XIII. p.* 476, *XVI.* 735.
4. Semnopithecus hypoleucos, *Blyth, Jour. As. Soc. Beng. X. p.* 839, *XII. p.* 170, *XIII. p.* 469, *XVI. p.* 733.
5. Semnopithecus argentatus, *Blyth, MS.*
6. Semnopithecus Johnii, *Fischer Sp.*
7. Semnopithecus priamus, *Elliot, Jour. As. Soc. Beng. XIII. p.* 470, *XVI. p.* 732. *Figured on pl.* LIV. *fig.* 2.
8. Semnopithecus anchises, *Elliot, Jour. As. Soc. Beng. XIII. pp.* 470, 476, *XVI. p.* 733.
9. Semnopithecus Phayrei, *Blyth, Jour. As. Soc. Beng. XVI. p.* 733.
10. Semnopithecus Barbei (?), *Blyth, N. S.? Jour. As. Soc. Beng. XVI. p.* 734.
11. Semnopithecus thersites, *Elliot, Jour. As. Soc. Beng. XVI. p.* 1271. *Figured in pl.* LIV. *fig.* 3.
12. Semnopithecus nemæus, *Linn. Sp.* Douc, *Buffon.*
13. Semnopithecus jubatus, *Wagner in Schreber Suppl.* S. aterrimus, capite pilis longis, brunnescentibus, jubam formantibus ad humeros usque dependentibus vestito; vitta frontali nigro. Hab. in India orientali; hospitatur in Museo Vindobonensi. *Schinz, Syst. Mammal. p.* 41.
14. Semnopithecus siamensis, *Müller, Monogr. overzicht, p.* 60.

II. From the Indian Archipelago.

15. Semnopithecus maurus, *Schreb. Sp.*
16. Semnopithecus pyrrhus, *Horsfield.*
17. Semnopithecus cristatus, *Raffles Sp.*
18. Semnopithecus flavimanus, *Isidore Geoffroy.*
19. Semnopithecus melalophus, *Fred. Cuv.*
20. Semnopithecus femoralis, *Horsfield.*
21. Semnopithecus obscurus, *Reid.* S. halonifer, *Cantor.* S. leucomystax, *Müller et Temminck.*
22. Semnopithecus mitratus, *Eschscholtz Sp.* S. comatus, *Desm.*
23. Semnopithecus rubicundus, *Müller, Monographisch overzicht, &c. p.* 61. Kalassi of Borneo.
24. Semnopithecus chrysomelas, *Müller, Monographisch overzicht, &c. p.* 61.
25. Semnopithecus sumatranus, *Müller, Monographisch overzicht, &c. p.* 61.
26. Semnopithecus frontatus, *Müller, Monographisch overzicht, &c. p.* 62.
27. Semnopithecus larvatus, *Wurmb. Sp.* The Kahau or proboscis monkey.

III. From Ceylon.

28. Semnopithecus cephalopterus, *Zimmerman Sp.*

Semn.? albogularis, Sykes (Proceed. Zool. Soc., 1831, p. 106), supposed to be a native of Madagascar, is enumerated by Mr. Ogilby (Monkeys, p. 331) and Martin (Quadrumana, p. 512) as a species of *Cercopithecus*. *S. auratus,* Geoffroy (Ann. de Mus. XIX.), according to the view of Dr. S. Müller, as above stated, is merely a variety, either of *S. sumatranus* or *S. chrysomelas*. *S. albocinereus*, of Desmarest, is enumerated by several writers as a distinct species, but its rank and character are as yet doubtful. Dr. S. Müller, in his general remarks on the genus *Semnopithecus* (Monographisch overzicht, &c. p. 59), states that several species of his list, may perhaps be found to be mere local varieties—*klimaats versheidenheden*—of other species.

Genus Colubus, *Illiger, Prodromus Syst. Mamm.*

15. *COLUBUS GUEREZA, Rüppell, Neue Wirbelthiere von Abyssinien, Saengthiere, p.* 1, *with a figure.*

Guereza, of the Abyssinians.

Hab. Godjam, Kulla, and Darnot, South and West Abyssinia.

A. and B. adult, C. young. From Sir W. C. Harris's Zoological Collection during his mission to Abyssinia.

Dr. Edward Rüppell, in the work above cited, gives a copious description of the form and covering of the Guereza, accompanied by an excellent figure. As to its habits, he briefly states that it lives in small families, on lofty trees, chiefly in the vicinity of running waters. It is active, lively without being noisy, and is inoffensive in its nature, not committing depredations in plantations, as is the case with most other monkeys. Its food consists of fruits, grains, and insects. In former times the Guereza was hunted for the sake of its fur, which was used as a mark of distinction in the army.

Genus CERCOPITHECUS, *Brisson. Erzleben, Syst. Regn. Anim.* 1777, *partim.*

SIMIÆ Species, *Linn. et al.*

16. *CERCOPITHECUS ENGYTHITHIA*, *Herm. Sp.*

Simia engythithia, *Herm. Obs. Zool. I.* 1804.

Cercopithecus griseo-viridis, *Desmarest, Mamm. p.* 61. 1820.

Cercopithecus griseo-viridis, *Rüppell, Neue Wirbelthiere von Abyssinien, p.* 8.

LE GRIVET, *Fred. Cuv.*

HAB. Nubia and Abyssinia.

A. From Sir W. C. Harris's Zoological Collection during his mission to Abyssinia.

Dr. E. Rüppell states that this Monkey is common in the lower regions of Abyssinia, in Sennar, and Kordofan, from the seashore to an elevation of 4,000 feet. Its name is Tota in Abyssinia, Abellen in Sennar, and also in Egypt, where it is extremely common in a tamed or domestic state.—(Rüppell, Neue Wirbelthiere, &c. p. 8.)

The third sub-family of *Simiadæ*, according to Mr. Martin's division (Quadrumana, 361), consists of the genera *Cercopithecus*, *Macacus*, and *Cynocephalus*, as generally admitted by modern systematic zoologists. Mr. Ogilby, in the Natural History of Monkeys, &c. (the Menageries, chapter IX. p. 292), has proposed a modification of this subdivision, and has arranged the Monkeys of this family under the genera *Cercopithecus*, *Papio*, and *Cynocephalus*, suppressing the genus *Macacus*, and uniting the long-tailed Macacs from Africa and from the Indian Archipelago, in the same genus, *Cercopithecus*. Although there are some advantages in this modification, it has not been adopted by Mr. Martin or by Mr. Blyth. I refer, on this subject, to the remarks with which

Mr. Martin introduces the third sub-family of the *Simiadæ,* in which he explains his views as to the limits and situation of the genera which compose this section.

Genus Macacus, *Lacépede,* 1803.

Sect. I. Long-tailed Macacs.

Genus Cercopithecus in part, *Ogilby, Müller, Cantor, and others.*

17. *MACACUS CYNOMOLGUS, Linn. Sp.*

Simia cynomolgus, *Linn., the male.*
Simia aygula, *Linn., the female.*
Macacus cynomolgus, *Desmar., Mamm.* 65.
Cercopithecus cynomolgus, *Müller, Ogilby, Cantor, &c.*
Hare-lipped Monkey, *Pennant and Shaw, the male.*
Egret Monkey, *Pennant and Shaw.*
The common Macac.
Kra, of the Malays in Sumatra, mentioned by Sir T. S. Raffles, with the doubtful synonym of *Simia fascicularis, Trans. Linn. Soc. XIII. p.* 246.
Jakko, the vulgar name of Europeans.

Hab. Java, Sumatra, Banka, Borneo, Celebes, Timor, Tenasserim, Nicobar Islands.

A. and B. Presented by Sir T. S. Raffles.
C. From Finlayson's Collection.

Of all the Monkeys inhabiting the Indian Archipelago, the common Macac is the most widely distributed. It is frequently brought to Europe, and it is one of the few of the Monkey tribe which has bred in menageries. In early life it is intelligent, good-natured, and docile, being easily trained to the performance of amusing tricks and exhibitions. It is frequently found on board of ships, where the name of Jakko is vulgarly applied to it. In the island of Java it is a great favourite with the natives, by whom it is domesticated, and placed in stables as a companion to their horses. As it advances in age, the character gradually changes, and it becomes sullen, morose, and mischievous. Dr. S. Müller, in his description of the Mammalia of the Indian Archipelago, gives copious details of the varieties of this Monkey, as they occur in Sumatra, Borneo, Java, and Timor, with the names by which they are respectively distinguished in different islands, and he considers the *Macacus auratus* of Belanger, in " Voyage aux Indes Orientales,"

and the *Macacus carbonarius* of Fred. Cuv., as mere varieties of the *Macacus cynomolgus*.—(Over de Zoogd. van den Ind. Archip. p. 48 and 49.)

18. *MACACUS RADIATUS*, *Geoffroy Sp. Ann. du Mus. XIX. p.* 98, 3.

Cercocebus radiatus, *Geoffr., l. cit.*
Macacus radiatus, *Desmar., Mamm. p.* 64.
Simia sinica, *Linn. Mant., pl.* 2, *p.* 521. *Gmel., Syst. Nat. Linn. I. p.* 34.
Cercocèbe toque, *Geoffr. St. Hil., Ann. du Mus. d'Hist. Nat. XIX. p.* 98, *sp.* 3.
Bonnet chinois, *Buffon, Hist. Nat. XIV. p.* 224, *pl.* 30.
Waanur, of the Mahrattas, *Sykes, Catal. of Mammalia.*
Bonneted Monkey, *Pennant. Bennett, Tower Menagerie, p.* 147.

Hab. Bengal, and the Peninsula of India.

A. From India.

The *Macacus radiatus* or Toque, a native of the peninsula of India and the southern parts of Bengal, is nearly allied to another species, the *Macacus pileatus* of Shaw and Desmarest, which appears to be peculiar to Ceylon. These species, although similar in form and habit, are readily distinguished by their colour, the *Macacus radiatus* being of a greenish-dun hue, and the latter rusty brown. They have frequently been confounded by systematic zoologists, and we are indebted to Mr. Ogilby for having unravelled the confusion of their synonymy. From his researches, it appears that the *Macacus radiatus* of Geoffroy is the *Bonnet chinois* of Buffon, described in the fourteenth volume of his " Histoire Naturelle," and the *Macacus pileatus* of Shaw and Desmarest the *Guenon couronnée ;* Suppl. vol. VII. pl. 10, of the same author. The specific name of *Simia sinica*, which has been applied to both species indiscriminately, is therefore superseded by the more correct nomenclature above proposed.—(See " Natural History of Monkeys," &c. p. 306-308.)

This Monkey is frequently found in menageries, and on account of its comparative mildness and inoffensive habits while young, may even be kept in houses and apartments without annoyance ; but when adult, it becomes sullen and morose. Its powers of mimicry surpass those of any other member of the family. It may be taught to turn a wheel regularly ; it smokes tobacco without inconvenience ; its feats of activity

afford much amusement when confined in dwellings, or when exhibited in public.

19. *MACACUS NEMESTRINUS*, *Linn. Sp. Syst. Nat. ed. XII., I. p.* 35.

Simia nemestrina, *Linn. S. N. ed. Gmel., I. p.* 28.
Simia platypygos, *Schreb., Saength. t.* 5, *B.*
Macacus nemestrinus, *Desmar., Mamm. p.* 66, 36.
Simia carpolegus, *Raffles, Trans. Linn. Soc. XIII. p.* 243.
Inuus nemestrinus, *Kuhl, Müller, &c.*
Papio nemestrinus, *Erxleb, Ogilby, Cantor.*
Pig-tailed Monkey, *Edw., Glean. I. p.* 8, *t.* 24.
Bruh, of the inhabitants of Sumatra. Three varieties, Bruh-sepotong, Bruh-selapi, and Bruh-puti. In Penang, Broh.

Hab. Sumatra, Borneo, Penang, and the Malayan Peninsula, according to Raffles, Müller, and Cantor.

A. Presented by Sir T. S. Raffles.

In the descriptive catalogue of a zoological collection made in Sumatra, Sir T. S. Raffles states that the Bruh is very common in the vicinity of Bencoolen, where the inhabitants train it to a useful domestic purpose. Of the three varieties above enumerated, the Bruh-sepotong is the most docile. A brief summary of what is known of the habits of this species is given in the following extract from Mr. Ogilby's "Natural History of Monkeys," &c. p. 377. "The Bruh," Mr. Ogilby states, "is both good-natured and intelligent. These qualities have procured it a high degree of respect among the natives of Sumatra, who are fond of domesticating the Bruh, and have even contrived to turn its intelligence and docility to a better account than we find authentically recorded of any other monkey. Sir T. S. Raffles informs us that they teach it to climb the cocoa palms for the purpose of procuring the fruit, and that it selects the ripe from the unripe nuts with admirable discrimination, and plucks no more than its master desires."

20. *MACACUS RHESUS*, *Audeb. Sp.*

Macacus rhesus, *Desmar., Mamm. p.* 66, 35.
Cynocephalus rhesus, *Latr., in Buff. Hist. Nat. ed. Sonn. XXXV. p.* 101, 2.
Papio rhesus, *Ogilby, Nat. Hist. of Monkeys, &c. p.* 372.

Rhesus, *Audeb., Hist. Nat. des Singes, fam.* 2, *sect.* 1, *fig.* 3.
Maimon, *Buff. et Daubent, tom. XIV. pl.* 19.
Bunder, according to Williamson and Ogilby, which is the common name of a Monkey in India.

Hab. Bengal, Assam, Nepal, Simla.

A. Presented by the Asiatic Society of Bengal.

The *rhesus* is not unfrequently brought to Europe, and is one of the few species which has been known to breed in confinement. M. Fred. Cuvier gives a very interesting history of an accouchement which occurred in Paris in 1824. In its habits the *rhesus* resembles the *nemestrinus*, but is on the whole less tractable and docile. It is, however, susceptible of considerable training, as appears from the following details given by Captain Williamson in his "Wild Sports of India," p. 100. In his remarks on Indian Monkeys generally, he states the common kind of Monkey which is found almost everywhere, is the Bunder, or Woodman. "These when erect may measure about two feet in height; they are docile and affectionate. Under the tuition of the jugglers, who, among many other curious matters, exhibit a variety of tricks done most naturally by the Bunders, it is very diverting to see these little mimics counterfeiting the gait and motions of various professions, and especially corroborating, by their actions, the deluge of flattery which the jugglers pour forth in praise of everything relating to the English character. Their antics are so excellently just on these occasions, that many human professors of the mimic art, might, without the smallest disparagement, take a lesson from these diminutive imitators."

Professor Oken, in his "Allgemeine Naturgeschichte," gives an extract from the "Neue Berlinische Schriften," I. 1795, 4, p. 211, illustrative of the habits of the *rhesus*. He states: "The well-known missionary, M. John, had an opportunity of observing an entire family of this species, which was exhibited in Tranquebar. It consisted of a male, female, and two young ones, which performed various feats of activity in the streets. The male was extremely ferocious, biting every one who approached it, so that it became necessary to extract the canine teeth. On one occasion, when the keeper attempted to measure it with a staff, it attacked him, seized his head, snapping in every direction, and he had much difficulty to disengage himself." A similar account of the malicious character of a female confined in Paris, is given by M. Audebert.

21. *MACACUS ASSAMENSIS, McClelland, Descriptive Catalogue of a Zoological Collection made while employed on a Deputation to Assam. Proceed. Zool. Soc. October*, 1839, *p.* 146. *Journ. As. Soc. Beng. XIII. p.* 476.

Macacus pelops, *Hodgs., Journn. As. Soc. Beng. IX.* 1213, *X.* 908.

HAB. Assam.

A. From the Deputation to Assam.

Nearly allied to the *rhesus*, but sufficiently distinct to entitle it to the rank of a species. "Bluish-gray, with dark brownish on the shoulders; beneath, light gray; face, flesh-coloured, but interspersed with a few black hairs; length, two feet and a half; proportions, strong; canine teeth, long, and deeply grooved in front; the last of the cheek-teeth in the upper jaw blunt."—(McClelland's MS.)

Genus GELADA, *Lesson, Gray.*

MACACUS, *Rüppell et al.*

22. *GELADA RUPPELLII, Gray, Catalogue of the Mammalia in the British Museum, p.* 9.

Macacus gelada, *Rüppell, Neue Wirbelthiere, &c. p.* 8, *t.* 2.

HAB. Abyssinia.

A. From Sir W. Harris's Zoological Collection during his Mission to Abyssinia.

"The *gelada,*" Dr. Rüppell states, "inhabit rocky districts covered with low brushwood, and are found exclusively on the ground. Their food consists of seeds, roots, and bulbous plants, in seeking which they associate in large companies, and frequently commit great devastations in cultivated grounds. I observed the *gelada* in the mountainous districts of Haremat, Simen, and by Axum, which are all from seven to eight thousand feet above the level of the ocean. At night they retire into caverns and fissures of the rocks. If attacked, they utter loud cries, resembling a rough kind of barking, but they never defend themselves against man, as is the custom of the *Cynocephalus hamadryas.*"—(Rüppell, Neue Wirbelthiere, p. 7.)

Genus SILENUS, *Lesson, Gray.*

SIMIÆ species, *Linn.* MACACUS, *Desmar. et al.* PAPIO, *Ogilby.*

23. *SILENUS VETER*, *Linn. Sp.*

Simia veter, *Linn.*, *Linn. Syst. Nat. ed. Gmel. I. p.* 30.
Simia silenus, *Linn. Syst. Nat. ed. XII., I. p.* 36.
Macacus silenus, *Desmar.*, *Mammal. p.* 63.
Papio silenus, *Ogilby*, *Monkeys*, *&c. p.* 386.
The Wanderoo of Buffon and French naturalists.

Hab. Ceylon and neighbouring districts of the Continent of India.

A. Presented by General T. Hardwicke.

Fam. LEMURIDÆ.

Genus Lemur, *Linn.*

Lemur ruber, *Péron et Lesueur*. *Geoffr.*, *Ann. du Mus. XIX. p.* 159.
Lemur ruber, The red Lemur, *Bennett*, *Gard. and Menag. Zool. Soc. p.* 145.

Hab. Madagascar.

A. Presented by General T. Hardwicke.

Genus Stenops, *Illiger*, *Prodromus Mammaliam*. 1811.
Lemur, *Linn. et al.* Nycticebus, *Geoffr. et al.*

24. *STENOPS JAVANICUS*, *Geoffr. Sp. Ann. du Mus. XIX. p.* 164.

Nycticebus javanicus, *Geoff.*, *loc. cit.*
Lemur tardigradus, *Raffl.*, *Trans. Linn. Soc. XIII. p.* 247.
Stenops javanicus, *Van der Hoeven*, *Tydschrift voor Nat. Gesh. vol. VIII. p.* 345.
Tukang, of the Javanese.
Kukang of the Malays; the large variety, Bruh-samundi, *Raffles*.
The slow-paced Lemur, *Bennett*, *Gard. and Menag. Zool. Soc. p.* 139.

Hab. Java, Sumatra, Borneo, Penang, Malayan Peninsula.

A. B. and C. From Java.

D. From Sumatra. Presented by Sir T. S. Raffles.

25. *STENOPS TARDIGRADUS*, *Linn. Sp.*

Lemur tardigradus, *Linn. Syst. Nat. ed. XII., I. p.* 44.
Nycticebus Bengalensis, *Geoff., Ann. du Mus. XIX. p.* 164.
Stenops tardigradus, *Van der Hoeven, Tydschrift voor Nat. Ges. VIII. p.* 346. *Blyth, J. A. S. Beng. XIII. p.* 478.
The slow-paced Lemur or LAJJA BANAR, *Sir William Jones, Asiatic Researches, IV. p.* 135.
SHURMUNDI BILLI, Modest cat, Hindustani.

HAB. Bengal, Assam, the Garrow Hills, Silhet and Arracan.

One imperfect ; precise locality not known.

The two species of Stenops above enumerated resemble each other so closely, that they are considered identical by several authors. They are generally distinguished by zoologists by the number of incisors in the upper jaw, which is four in *Stenops tardigradus*, and two in the *Stenops javanicus;* besides these there are other marks of difference, such as the form of the head, which is more elongated in the *Stenops javanicus*, the colouring, and the fur, which in the continental species is woolly and somewhat crisp or curled. Dr. Van der Hoeven, in his remarks on the genus Stenops (Tydschrift voor Nat. Ges. VIII. p. 345), characterizes the *Stenops javanicus:* caudâ brevissimâ, cinereo-flavus, striâ dorsali fuscâ, maculâ albâ frontali, dentibus incisivis superioribus duobus tantum, rostro subacuto elongato. *Stenops tardigradus:* caudâ brevissimâ, cinereo-flavus ; striâ dorsali fuscâ, fronte fuscâ, stria alba inter oculos angustâ, supra oculos evanescente, dentibus incisivis superioribus quatuor, rostro obtusiusculo.—(See also Tyds. p. 285.)

Mr. Blyth, in the sixteenth volume of the Journal of the Asiatic Society of Bengal, enumerates the peculiarities of specimens which he examined from Java, Malacca, and Bengal. In the fourth volume of the Asiatic Researches, Sir William Jones gives an interesting account of an individual which lived with him for some time, of which the following is an extract :

" In his manners, he was for the most part gentle, except in the cold season, when his temper seemed wholly changed ; and his Creator, who made him so sensible of cold, to which he must often have been exposed even in his native forests, gave him, probably for that reason, his thick fur, which we rarely see on animals in these tropical climates. To me, who not only constantly fed him, but bathed him twice a week in water accommodated to the seasons, and whom he clearly distinguished from

others, he was at all times grateful, but when I disturbed him in winter he was usually indignant, and seemed to reproach me with the uneasiness which he felt, though no possible precautions had been omitted to keep him in a proper degree of warmth. At all times he was pleased with being stroked on the head and throat, and frequently suffered me to touch his extremely sharp teeth; but at all times his temper was quick, and when he was unseasonably disturbed, he expressed a little resentment by an obscure murmur, like that of a squirrel, or a greater degree of displeasure by a peevish cry, especially in winter, when he was often as fierce, on being much importuned, as any beast of the woods. From half an hour after sunrise to half an hour before sunset, he slept without intermission rolled up like a hedgehog, and as soon as he awoke he began to prepare himself for the labours of his approaching day, licking and dressing himself like a cat; an operation which the flexibility of his neck and limbs enabled him to perform very completely; he was then ready for a slight breakfast, after which he commonly took a short nap, but when the sun was quite set, he recovered all his vivacity. His ordinary food was the sweet fruit of this country; plantains always, and mangos during the season, but he refused peaches, and was not fond of mulberries, or even of guaiavas; milk he lapped eagerly, but was contented with plain water. In general he was not voracious, but never appeared satiated with grasshoppers, and passed the whole night, while the hot season lasted, in prowling for them. When a grasshopper, or any insect, alighted within his reach, his eyes, which he fixed on his prey, glowed with uncommon fire, and, having drawn himself back to spring on it with greater force, he seized the victim with both his fore-paws, but held it in one of them, while he devoured it. For other purposes, and sometimes even for that of holding his food, he used all his paws indifferently as hands, and frequently grasped with one of them the higher part of his ample cage, while his three others were severally engaged at the bottom of it; but the posture of which he seemed fondest, was to cling with all four of them to the upper wires, his body being inverted; and in the evening he usually stood erect for many minutes, playing on the wires with his fingers and rapidly moving his body from side to side, as if he had found the utility of exercise in his unnatural state of confinement. A little before daybreak, when my early hours gave me frequent opportunities of observing him, he seemed to solicit my attention; and if I presented my finger to him, he licked or nibbled it with great gentleness, but eagerly took fruit when I offered it, though he seldom ate much at his morning repast. When the day brought back his night,

his eyes lost their lustre and strength, and he composed himself for a slumber of ten or eleven hours.

"As to his country, the first of the species that I saw in India was in the district of Tipra, properly Tripura, whither it had been brought, like mine, from the Garrow Mountains; and Dr. Anderson informs me, that it is found in the woods on the coast of Coromandel. Another had been sent to a member of our society from one of the eastern isles, and though the Loris may be also a native of Sílán, yet I cannot agree with M. de Buffon that it is the minute, sociable, and docile animal mentioned by Thevenot, which it resembles neither in size nor in disposition.

"My little friend was, on the whole, very engaging, and when he was found lifeless, in the same posture in which he would naturally have slept, I consoled myself with believing that he died without pain, and lived with as much pleasure as he could have enjoyed in a state of captivity."

The habits of both species of Stenops are strictly nocturnal. Dr. Müller states that they are found in large forests, chiefly in mountainous districts, where they sleep during the day in holes and fissures of large trees. On the approach of evening they awake; and during the night they ramble among the branches of trees, slowly and quietly, in quest of their food, which consists chiefly of tender leaves and fruits. They also devour small birds, insects, and mice. Sir T. S. Raffles informs us that the inhabitants of Sumatra have a superstitious aversion to these animals, which is confirmed by Dr. Müller.

Genus TARSIUS, *Stoll et al.*

LEMUR, *Pallas et al.* DIDELPHIS, *Schreb.* MACROTARSUS, *Lacep.*

26. *TARSIUS SPECTRUM*, *Geoff. Ann. du. Mus. XIX. p.* 168.

Tarsius bancanus, *Horsfield, Zool. Res. in Java, junior fide Temminckii.*

Lemur spectrum, *Pallas.*

Didelphis macrotarsus, *Schreb., Saength. III. p.* 554, *t.* 155. *Linn. Syst. Nat. ed. Gmel. I.* 109.

Lemur tarsier, *Raffl., Trans. Linn. Soc. XIII.* 337.

Tarsier, *Buffon.*

HAB. Sumatra, Banka, Borneo, Macassar, Salayer.

A. From Banka.

The Tarsier in its habits is nocturnal. It is mild, gentle, easily domesticated, and capable of attachment; in confinement it allows itself to be handled and caressed. According to Dr. S. Müller, it lives in large damp forests on the tops of trees. Its food it differently indicated by writers. It appears to eat indiscriminately fruits and small animals. Although quite inoffensive, it is an object of detestation to the natives. Raffles states that the inhabitants of Sumatra have a superstitious dread of these animals, insomuch that if they happen to see one upon any tree near their ladangs, or forest rice-fields, they will immediately abandon them, and seek another spot; otherwise they believe some misfortune will certainly befall them or their family.

Genus Loris, *Geoffr., in Ann. du Mus. XIX. p.* 163, 1.

Lemur, *Schreb. et al.* Stenops, *Illig. et al.*

27. *LORIS GRACILIS*, *Geoff., loc. cit. Desm., Mamm.* 131.

Lemur tardigradus, *Schreb., Saength. I. p.* 134.

Stenops gracilis, *Van der Hoeven, Tydschrift, VIII. p.* 344.

Loris, *Buffon.*

Hab. Ceylon.

A. Presented by the Asiatic Society of Bengal.

Fam. GALEOPITHECIDÆ.

Genus Galeopithecus, *Pallas.*

Lemur, *Linn. et al.*

28. *GALEOPITHECUS VOLANS*, *Shaw, Zool. I. p.* 116, *fig.* 38.

Galeopithecus rufus, variegatus, undatus, marmoratus, and philippensis, appear to be mere varieties of the *Galeopithecus volans* of Shaw.

Lemur volans, *Linn. Syst. Nat. ed. XII., I. p.* 45. *Gmel. I. p.* 45.

Vespertilio admirablis, *Bont., Hist. Nat. Ind. Or. p.* 68, *c. fig.*

Cato-simius volans, *Camelli.*

Flying Maucaco, *Pennant.*

Colugo, *Griff., Anim. Kingd. V. p.* 286.

Gendoo, of the natives of Java.

Kubung, of the natives of Sumatra, *Raffles, Linn. Trans. XIII. p.* 248.

Kúbung or Kurbong, *Cantor, Cat. of Malayan. Mamm. p.* 7.

HAB. Java, Sumatra, Borneo, Penang, Siam, Malayan Peninsula.

In Java, the Galeopithecus is confined to particular districts, where it is met with chiefly on slightly-elevated hills, covered with a fertile soil, and abounding with young luxuriant trees, the branches of which afford it a safe concealment during the day. As the evening approaches, it leaves its retreat, and is seen in considerable numbers making oblique leaps from one tree to another; it also discovers itself by a croaking, hoarse, disagreeable noise. The membrane or expansile skin, by which it is enabled to make oblique leaps, resembling that of the Flying Squirrel, is continued on each side from the neck to the fore-feet, thence to the hind-feet, again to the tip of the tail, and to the roots of the claws. If, unfortunately, an individual is forced from its usual abode, it advances by slight awkward leaps, until it meets with an object on which it can ascend by its claws. If surprised during the day in its concealment, it may easily be taken, as its habits are strictly nocturnal.

The Galeopithecus lives entirely on young fruits and leaves; those of the cocoa-nut tree and of the *Bombax pentandrum* are its favourite food; and it commits great injury to the plantations of these, which surround the villages of the natives.

Fam. VESPERTILIONIDÆ.

PTEROPINA, *Gray, Catal. Mamm. Br. Mus. Syst. List. XIX.*

Genus PTEROPUS, *Brisson et al.*

VESPERTILIONIS Species, *Linn. et al.*

29. *PTEROPUS EDULIS, Péron et Lesueur. Temm., Monogr. I. p.* 172. *Cantor, Cat. of Mamm. p.* 14.

Pteropus javanicus, *Desmar., Mamm. p.* 109. *Horsfield, Zool. Research. in Java, with a figure.*

KALONG, of the natives of Java.

KLUANG or KALUWANG, of the Malays of Sumatra, and of the peninsula of Malacca.

HAB. Java and other Islands of the Indian Archipelago.

A. and B. Horsfield's Collection from Java.

C. Finlayson, from Siam.

Several skins.

The *Pteropus edulis* is extremely abundant in the lower parts of Java, and uniformly lives in society; the more elevated districts are not visited by it. Numerous individuals select a large tree for their resort, and, suspending themselves with the claws of their posterior extremities to the naked branches, often in companies of several hundreds, afford to a stranger a very singular spectacle. They pass the greater portion of the day in sleep, hanging motionless. Ranged in succession with the head downwards, the membrane contracted about the body, and often in close contact, they have little resemblance to living beings, and by a person not accustomed to their economy, are readily mistaken for a part of the tree, or for a fruit of uncommon size suspended from its branches. Soon after sunset, they gradually quit their hold, and pursue their nocturnal flights in quest of food. They direct their course by an unerring instinct, to the forests, villages, and plantations, occasioning incalculable mischief, attacking and devouring indiscriminately every kind of fruit, from the abundant and useful cocoa-nut which surrounds every dwelling of the meanest peasantry, to the rare and most delicate productions, which are cultivated with care by princes and chiefs of distinction.

Mr. Marsden, in his History of Sumatra, p. 118, informs us " that he has observed very large flights of the Kaluwang, passing at a great height in the air, as if migrating from one country to another, and Captain Forrest notices their crossing the Straits of Sunda from Java Head to Mount Pugong; they are also seen hanging by hundreds upon trees."

30. *PTEROPUS EDWARDSII*, *Geoff. Ann. du Mus. XV. p.* 92.

Pteropus medius, *Temm., Monog. I. p.* 176.
Pteropus Edwardsii, *Temm. l. c. II. p.* 61.
Pteropus medius, *Sykes, Catal. of Mammalia observed in Dukhun, Proceed. Zool. Soc.* 1831.
Pteropus Assamensis, *McClelland, Proceed. Zool. Soc.* 1839.
Wurbagool, of the Mahrattas, *Sykes.*

Hab. Continental India.

A. Presented by Colonel Sykes.
Several skins.
Two Drawings in Dr. F. Buchanan (Hamilton's) Collection.

Colonel Sykes informs us that " the only persons in Western India who eat these Bats are the native Portuguese; but I can personally tes-

tify that their flesh is delicate and without disagreeable flavour. I have measured individuals with a greater length of body (fourteen inches and a half) than is given of the *Pteropus javanicus* by Dr. Horsfield."

31. *PTEROPUS POLIOCEPHALUS*, *Temm.*, *Monogr. I. p.* 179.

HAB. New Holland.

A. From Finlayson's Collection.

Genus XANTHARPYIA, *Gray.*

PTEROPUS, *Geoffroy, Temminck, et al.*

32. *XANTHARPYIA ÆGYPTIACA*, *Geoffr. Sp.*

Pteropus ægyptiacus, *Geoffr., Ann. du Mus. XV. p.* 96.
Pteropus Geoffroyi, *Temm., Monogr. I. p.* 197.

HAB. Northern Africa.

A. From Abyssinia, Sir W. Harris's Mission.

Genus MACROGLOSSUS, *Fred. Cuv., Mammif.* 1822.

PTEROPUS, *Geoffr., Temm., Horsf., et al.*

33. *MACROGLOSSUS MINIMUS*, *Geoff. Sp.*

Pteropus minimus, *Geoffr., Ann. du Mus. XV. p.* 97.
Pteropus minimus, *Temm., Monogr. I. p.* 191, *with a figure.*
Pteropus rostratus, *Horsf., Zool. Research. with a figure.*
Macroglossus minimus, *Gray, Mag. Zool. Bot. N.* 12.
LOWO-ASSU, or Dog-bat, of the Javanese.
The French name, KIODOTE, appears to be a perversion of the name CHODOT, applied by the Javanese to several small Chiroptera.

HAB. The whole of the Indian Archipelago, from Sumatra to the Moluccas ; not abundant.

A. B. and C. Horsfield's Collection from Java.

D. Finlayson, from Siam, with a lengthened nose, perhaps a distinct species.

The *Macroglossus minimus* is far less abundant than the *Pteropus edulis*, but it still exists in sufficient numbers to commit serious injury among the plantations and fruit-trees. Like other Pteropi it feeds on fruits of every description, but particularly infests the various species of *Eugenia*, or jamboo, which are cultivated in gardens. During the day it remains suspended under branches of trees, or it retires under roofs of old houses and sheds. At night it sallies forth like other Pteropi.

Genus CYNOPTERUS, *Fred. Cuv., Dents du Mamm.* 1825.

PTEROPUS, *Temm. et al.* PACHYSOMA, *Isid. Geoff.*, 1829, *et al.*

34. *CYNOPTERUS TITTHÆCHEILUS, Temm. Sp.*

Pachysoma titthæcheilum, *Müller, Over de Zoogd. van den Ind. Archip. p.* 21.

Pachysome mammilèvre, *Isid. Geoff., Dict. Class. XIV. p.* 704.

Pteropus titthæcheilus, *Temm., Monogr. I. p.* 198.

CHODOT, of the natives of Java.

HAB. Java, Sumatra, and other islands of the Indian Archipelago; also Malacca.

A. B. and C. Horsfield's Collection from Java.

Several Specimens, not prepared, from Malacca. Presented by William Griffith, Esq.

35. *CYNOPTERUS MARGINATUS, Hamilton (Buchanan) Sp.*

Vespertilio marginatus, *Hamilton (Buchanan), fide Gray, Catal. Mamm. Br. Mus. p.* 38.

Pteropus marginatus, *Geoffr., Ann. du Mus. XV. p.* 97.

Cynopterus marginatus, *Less., Mamm. p.* 115.

HAB. Common throughout Continental India, *Blyth, Journ. A. S. B.* Has not been noticed in the Archipelago.

A. Presented by the Asiatic Society of Bengal.

B. and C. Dried, from Continental India.

36. *CYNOPTERUS HORSFIELDII, Gray, Catal. Mamm. Br. Mus. p.* 38.

Nearly allied to *C. titthæcheilus*. Neck and sides very bright rufous, *Gray, l. cit.*

The two first species of Cynopterus above enumerated, although resembling each other in many particulars, are clearly distinguished by the following points. In the *C. titthæcheilus*, the nose, or rostrum, is comparatively short, thick, and abruptly terminated; the nares are very tumid; on the medial portion of the upper lip, opposite the incisors, are two very prominent warts divided by a groove, whence the name *mammilèvre;* and the general colour inclines to reddish brown. In the *C. marginatus*, the rostrum is more lengthened, the nostrils are less prominent, and the medial warts scarcely perceptible; the eyes are farther removed from the nares. The general colour is more dusky, inclining to blackish brown. In both species the ears are surrounded with a white margin. Their geographical distribution is also different.

PHYLLOSTOMINA, *Gray, Cat. Mamm. Br. Mus. Syst. List, XVIII.*

Genus MEGADERMA, *Geoffr. et al.*

VESPERTILIONIS Species, *Linn. et al.* PHYLLOSTOMUS, *Illig., Prod.*

37. *MEGADERMA LYRA, Geoffr., Ann. du Mus. XV. p.* 190. *Desmar., Mamm. p.* 124.

HAB. The Continent of India. Common throughout India, *Blyth, Journ. A. S. Beng. XI. p.* 255, *XIII. p.* 480.

A. William Griffith's Collection from Afghanistan.

B. and C. Dried, not set up.

We are indebted to Mr. Edward Blyth, Curator of the Museum of the Asiatic Society of Bengal, for the following interesting and novel details of this species contained in a notice of the predatory and sanguivorous habits of the bats of the genus Megaderma, &c.—(J.A.S.B.XI.p.255.)

" Chancing, one evening, to observe a rather large bat enter an outhouse, from which there was no other egress than by the doorway, I was fortunate in being able to procure a light, and thus proceed to the capture of the animal. Upon finding itself pursued, it took three or four turns round the apartment, when down dropped what at the moment I supposed to be its young, and which I deposited in my handkerchief. After a somewhat tedious chase, I then secured the object of my pursuit, which proved to be a fine pregnant female of *Megaderma lyra*. I then looked at the other bat which I had picked up, and to my considerable surprise, found it to be a small Vespertilio, nearly allied to the European *V. pipistrellus*, which is exceedingly abundant, not only here but apparently throughout India, being the same also, to all appearance, as a small species which my friend Dr. Cantor procured in Chusan. The individual now referred to was feeble from loss of blood, which it was evident the Megaderma had been sucking from a large and still bleeding wound under and behind the ear; and the very obviously suctorial form of the mouth of the vampyre was of itself sufficient to hint the strong probability of such being the case. During the very short time that elapsed before I entered the outhouse, it did not appear that the depredator had once alighted; but I am satisfied that it sucked the vital current from its victim as it flew, having probably seized it on the wing, and that it was seeking a quiet nook where it might devour the body at leisure. I kept both animals wrapped separately in my handkerchief till the next morning, when,

procuring a convenient cage, I first put in the Megaderma, and after observing it some time, I placed the other bat with it. No sooner was the latter perceived, than the other fastened on it with the ferocity of a tiger, again seizing it behind the ear, and made several efforts to fly off with it, but finding it must needs stay within the precincts of the cage, it soon hung by the hind-legs to one side of its prison, and after sucking its victim till no more blood was left, commenced devouring it, and soon left nothing but the head and some portions of the limbs. The voidings observed very shortly afterwards in its cage resembled clotted blood, which will explain the statement of Stedman and others, concerning masses of congealed blood being always observed near a patient who has been attacked by a South American vampyre.

"Such then is the mode of subsistence of the Megaderma. The sanguivorous propensities of certain Bats inhabiting South America, have long been notorious, but the fact has not heretofore been observed in the Old World; and the circumstance of one kind of Bat preying upon another is altogether new, though I think it not improbable that the same will be found to obtain (to a greater or less extent) among the larger species, if not throughout the whole extensive allied genus of Rhinolophus (or Horse-shoe Bats), which, like Megaderma, are peculiar to the eastern world."—(Journ. As. Soc. Beng. XI. pp. 255-6.)

38. *MEGADERMA SPASMA*, *Linn. Sp.*

Vespertilio spasma, *Linn.*, *Syst. Nat. XII.*, *I. p.* 47; *ed. Gmel. I. p.* 46.

Megaderma spasma, *Geoff.*, *Ann. du Mus. XV. p.* 195. *Müller, over de Zoogd. v. d. Ind. Archip. p.* 24.

HAB. The Indian Archipelago.

A. Horsfield's Collection from Java.

B. Dried.

In *M. lyra*, the lobes of the ears are united to a considerable extent; in *M. spasma*, the lobes are nearly distinct.

39. *MEGADERMA* ———

A species, probably new, from Continental India, contributed by E. Blyth, Esq., on behalf of the Asiatic Society of Bengal. The lobes of the ears are partially united as in *M. lyra*. Fur above and below bluish-gray, uniform on both surfaces, very long and soft. The membrane along the sides of the abdomen without transverse lines. The lobes of the ears externally near the base, marked with regularly parallel ridges.

RHINOLOPHINA, *Gray, Cat. Mamm. Br. Mus. Syst. List, XVIII.*

Genus Rhinolophus, *Geoffr. et al.*

Vespertilionis, Species, *Linn. et al.*

Sub-Genus I. Rhinolophus, *Pr. s. d.*

† Prosthematis membranâ superiore erectâ lanceolatâ.
Facial crest terminating above in a lance-shaped point.

40. *RHINOLOPHUS AFFINIS, Horsfield, Zool. Res. in Java, Illustrations, pl. viii. A. B. figure of the head.*

Rhinolophus affinis, *Temm., Monogr. II. p.* 31. *Müller, over de Zoogd. van den Ind. Archip. p.* 23.

Hab. Java and Sumatra.

A. Horsfield's Collection from Java.

41. *RHINOLOPHUS MINOR, Horsfield, Zool. Research. in Java, Illustrations, pl. viii. C. D. figure of the head.*

Rhinolophus minor, *Temm., Monogr. II. p.* 35. *Müller, over de Zoogd. van den Ind. Archip. p.* 23.

Hab. Java, Sumatra, and Timor.

A. Horsfield's Collection from Java.

42. *RHINOLOPHUS ROUXII, Temm., Monogr. II. p.* 306.

Hab. According to M. Temminck, this species is very generally distributed through Continental India, being common in collections from Pondicherry and Calcutta.

A. Presented by John Thomas Pearson, Esq.

Allied to *R. macrotis* and *subbadius* of Hodgson.

43. *RHINOLOPHUS PEARSONII, Horsfield.*

Colour above, dark brown with a slight shade of chestnut; underneath, brown with a sooty cast; fur, very long, dense, and soft; ears, distinct, with an additional rounded lobe below, measuring anteriorly nearly three-fourths of an inch; point of the facial crest, moderately developed; length from the tip of the nose to the root of the tail, three inches; tail, half an inch; length of the forearm, two inches; expanse of the wings, eleven inches. Although allied to Mr. Hodgson's *R. tragatus*, possesses distinct characters.

Hab. Darjiling.

A. Presented by John Thomas Pearson, Esq.

Sub-Genus Hipposideros, *Gray.*

†† Prosthematis membranâ superiore transversâ porrectâ.

Facial crest surmounted by a transverse membrane.

44. *RHINOLOPHUS (HIPPOSIDEROS) DIADEMA?*

Hipposideros diadema, *Gray? Cantor, Catalogue of Mammalia inhabiting the Malayan Peninsula and Islands, p.* 11.

Rhinolophus diadema, *Geoffroy? Ann. du Mus. XX. p.* 263.

A very perfect specimen of a large Rinolophe, from the Malayan Peninsula has been presented to the Museum by Dr. Cantor, of which he gives the following details in the catalogue above mentioned, p. 11.

"The Malayan individuals are, according to age and sex, of a more or less intense reddish or greyish brown above, under certain lights assuming a golden lustre, owing to the whitish points of the hairs; beneath, they are of a lighter greyish-brown. In the adult male, the livid flesh-coloured nasal appendage is larger, more complicated, and somewhat different from the figure given by Geoffroy St. Hilaire (Ann. du Muséum, XX. pl. 5 and 6), which resembles the female in the simpler appendage in the absence of the frontal pore. The latter organ in the adult male is large, secreting a yellowish-brown oily fluid........ The size of the Malayan individuals appears to exceed those from Timor." The specimen sent by Dr. Cantor agrees generally with the *R. diadema,* described by M. Geoffroy, in colour, outline of membrane, and form of the ears, but it is one-third larger, the body and tail together measuring seven inches, and the flying membrane twenty-two inches. The comparison of fresh specimens will probably show that Dr. Cantor's species is entitled to a distinct rank; this conjecture is confirmed by distance of its locality from *R. diadema,* which hitherto has only been found in Timor.

45. *RHINOLOPHUS (HIPPOSIDEROS) NOBILIS, Horsf. Sp.*

Rhinolophus nobilis, *Horsfield, Zool. Research., with a Figure and an Illustration, pl. viii. Fig. L. the head.*

Rhinolophus nobilis (Rhinolophe fameux) *Temm., Monogr. II. p.* 10. *Figure of the animal, pl. xxviii.; head, pl. xxix.; skull, pl. xxxii. fig.* 1, 2, 3. *Müller, over de Zoogd. von den Ind. Archip. p.* 23.

Hipposideros nobilis, *Gray. Cantor, Catal. of Malayan Mammalia, p.* 12.

HAB. Java, Timor, and the Moluccas.

A. and B. Horsfield's Collection from Java.

46. *RHINOLOPHUS (HIPPOSIDEROS) LARVATUS, Horsf. Sp.*

Rhinolophus larvatus, *Horsfield, Zool. Research., with a figure of the entire animal, and of the head.*

Rhinolophus larvatus, *Temm., Monogr. II. p.* 22. *Müller, over de Zoogd. v. d. Ind. Archip. p.* 23.

Hipposideros larvatus, *Gray, Cat. of Mamm. Br. Mus. p.* 23. *Journal of the As. Soc. of Beng. vol. XIII. p.* 488. *Mr. Blyth considers a specimen from Arracan as belonging to this species.*

HAB. Java and the Coast of Tenasserim, according to Mr. Blyth (J. A. S. B. XIII. p. 488).

A. Horsfield's Collection from Java.

47. *RHINOLOPHUS (HIPPOSIDEROS) VULGARIS, Horsf. Sp.*

Rhinolophus vulgaris, *Horsfield, Zool. Research., with a figure of the head. Illustrations, pl. viii. E. F.*

Hipposideros vulgaris, *Gray, Mag. of Zool. and Bot. II.* 11. *Cat. Mamm. Br. Mus. p.* 23. *Cantor, Cat. of Mamm. &c. p.* 13, *exclus. syn. Blyth, Journ. As. Soc. Beng. XIII.* 488.

Hab. Java.

A. Horsfield's Collection from Java.

B. Dried.

48. *RHINOLOPHUS (HIPPOSIDEROS) MURINUS, Elliot Sp.*

Rhinolophus murinus, *Elliot, Catal. of Mammalia, &c. Madr. Jour. of Lit. and Science, vol. X. p.* 99.

Hipposideros murinus, *Gray, Mag. of Zool. and Bot. II.* 10. *Cat. Mamm. Br. Mus. p.* 23. *Cantor, Cat. of Mamm. &c. p.* 13.

Hab. Southern Mahratta country, *Elliot.* Penang and Nicobar Islands, *Cantor.*

A. Presented by the Asiatic Society of Bengal.

††† Sinu frontali supra prosthematis membranam transversam.
A glandular sinus above the frontal crest.

49. *RHINOLOPHUS (HIPPOSIDEROS) INSIGNIS, Horsf. Sp.*

Rhinolophus insignis, *Horsfield, Zool. Research., with a figure of the head. Illust. pl. viii. fig. I. K.*

Rhinolophus insignis, *Temm., Monogr. II. p.* 14, *with a figure of the head, pl. xxix. fig.* 2. *Müller, over de Zoogd. v. d. Ind. Archip. p.* 23.

Rhinolophus deformis, *Horsf., Zool. Research., with a figure of the head. Illust. pl. viii. G. H.*

Lowo awoo, of the Javanese.

Hab. Java and the neighbouring islets.

A. Horsfield's Collection from Java.

B. Dried.

I cannot agree with the opinion expressed by M. Temminck (Monogr. II. p. 15), that the *R. vulgaris* above described is the female of this species. M. Fischer, in the " Synops. Mammal.," enumerates the *R. insignis* as a synonym of *R. speoris*, Geoffr., which determination is not in accordance with the authors on Vespertilionidæ above cited. See Blyth, J. A. S. B. XIII. p. 489.

VESPERTILIONINA, *Gray, Cat. Mamm. Br. Mus. Syst. List, XIX.*

Genus Nycteris, *Geoff.*

50. *NYCTERIS JAVANICA, Geoffr., Ann. du Mus. p.* 20, *t.* 1. *Desmar., Mamm. p.* 129. *Müller, Verhandl. over Nat. Gesch. Tafel der Zoogdieren.*

Petalia javanica, *Gray, Mag. Zool. and Bot. II.* 12.

Hab. Java.

A. Horsfield's Collection from Java.

B. Presented by the Asiatic Society of Bengal. This latter, Mr. Blyth states, may possibly be a distinct species.

Genus Lasiurus, *Rafin., Gray.*

51. *LASIURUS PEARSONII, Horsf.*

Hab. Darjiling.

A very perfect specimen of an Indian species of Lasiurus, from Darjiling has been presented to the Company's Museum by Dr. J. T. Pearson. As to its generic identity with the American species of this genus, I have the opinion of Mr. J. E. Gray, of the British Museum, who has examined the specimen.

The entire length of *Lasiurus Pearsonii* is four inches and an half, of which the tail constitutes one inch and an half; the anti-brachium measures two inches and a quarter, and the expanded membrane nearly fourteen inches. Fur on the body above, very soft, silky, and rather long. Colour on the head, neck, and shoulders, brownish-gray with a ferruginous cast, variegated with whitish hairs; the rest of the body above, with the base of the membrane, the thighs, and the interfemoral membrane, have a deep bay or reddish-brown hue, and delicate hairs of the same colour are scattered over the membrane, and project from its border. The body underneath is thickly covered with a grey fur, which is paler on the breast and throat. The interfemoral membrane is marked with regularly parallel transverse lines. The ears are more rounded than in the American species. The tragus is lanceolate, and extends to the middle of the lobe. The flying membrane is brown.

Genus NYCTICEJUS, *Rafinesque, Temminck, et al.*

VESPERTILIO, *Horsf. et al.*

SCOTOPHILUS, *Gray, Cantor.*

52. *NYCTICEJUS TEMMINCKII, Horsf. Sp. Temm., Monogr. II. p.* 149, *pl. xlvii. fig.* 3 ; *entire animal, figs.* 4, 5, 6 ; *the head in different views. Müller, Verhandl. over Nat. Gesch. Tafel der Zoogdieren.*

Vespertilio Temminckii, *Horsf., Zool. Researches.*

HAB. Java, Sumatra, Borneo, Banda, and Timor.

A. Horsfield's Collection from Java.

B. Dried specimen.

C. and D. Presented by J. McClelland, Esq.; locality not known.

This species is very abundant, collecting, by companies of hundreds, in trunks and hollows of trees, and feeding chiefly on white ants.

53. *NYTICEJUS FLAVEOLUS, Blyth.*

Scolophilus Temminckii, *Gray, Mag. Zool. and Bot. II.* 15.

A. and B. Presented by the Asiatic Society of Bengal; the former bright rufous beneath, the latter yellowish-grey.

C. Presented by Dr. H. Falconer; pale.

D. E. F. dried specimens. From the same donor.

This species represents the former on the continent of India, being fully one-third larger. The colour varies considerably in different individuals, being dark brown above, in different shades, and rufous or yellowish underneath. It is very abundant in many parts of Continental India.

54. *NYCTICEJUS ISABELLINUS, Blyth MS.*

HAB. Central India.

A. dried specimen. Presented by the Asiatic Society of Bengal.

A new species, indicated by Mr. Blyth. Of the size of *N. Temminckii,* clearly characterized by an uniform isabellina tint both above and underneath.

55. *NYCTICEJUS CASTANEUS, Gray.*

Scotophilus Temminckii, *Cantor, Catal. of Mammalia of the Malayan Peninsula, &c. p.* 15.

KLAWAH, of the Malays.

HAB. Singapore, Penang, Malayan Peninsula and Islands.

A. Presented by Dr. Cantor.

B. Presented by the Asiatic Society of Bengal.

The characteristic feature of this species is an uniform deep chestnut colour of the body, above and beneath; the membrane also is dark-coloured, inclining to black, and the head is blackish. Size of *N. Temminckii.* There is a considerable family resemblance between the four species of Nycticejus here enumerated, but the peculiarities respectively are sufficiently strong to entitle each to a specific rank.

Genus VESPERTILIO, *Linn. et al.*

56. *VESPERTILIO ADVERSUS, Horsfield, Zool. Researches.*

Vespertilio adversus, *Horsf. Temm., Monogr. II. p.* 221. *Müller, Verhandl. over Nat. Gesch. Tafel der Zoogdieren.*

HAB. Java.

A. Horsfield's Collection from Java.

57. *VESPERTILIO HARDWICKII*, *Horsfield, Zool. Research.*

Vespertilio Hardwickii, *Temm., Monograph. II. p.* 222. *Müller, Verhandl. over Nat. Gesch. Tafel der Zoogdieren.*

HAB. Java. Also Sumatra, *Temminck.*

A. Horsfield's Collection from Java.

58. *VESPERTILIO TRALATITIUS*, *Horsfield, Zool. Research.*

Vespertilio tralatitius, *Horsf. Temm., Monogr. II. p.* 228. *Müller, Verhandl. over Nat. Gesch. Tafel der Zoogdieren. Cantor, Catal. of Malayan Mammalia, p.* 15.

LOWO-MANIR, of the Javanese.

HAB. Java and Sumatra.

A. Horsfield's Collection.

This species has much of the habit of European Vespertiliones. Hence the specific name, *not* trilatitus.

59. *VESPERTILIO IMBRICATUS*, *Horsfield, Zool. Research.*

Vespertilio imbricatus, *Horsf. Temm., Monogr. II. p.* 216. *Müller, Verhandl. over Nat. Gesch. Tafel der Zoogdieren.*

LOWO-LESSER, of the Javanese.

HAB. Java.

A. Horsfield's Collection.

60. *VESPERTILIO* ——— ?

HAB. Continental India.

A. Presented by the Asiatic Society of Bengal.

61. *VESPERTILIO* ——— ?

HAB. Continental India.

A. Presented by the Asiatic Society of Bengal.

62. *VESPERTILIO* ——— ?

HAB. Continental India.

A. Calcutta. Presented by the Asiatic Society of Bengal.

63. *VESPERTILIO* ——— ?

HAB. Continental India.

A. Presented by the Asiatic Society of Bengal.

64. *VESPERTILIO* ——— ?

HAB. Continental India.

A. Presented by the Asiatic Society of Bengal.

65. *VESPERTILIO* ——— ?

HAB. Darjiling.

A. Presented by John Thomas Pearson, Esq.

Several of the species above enumerated appear to be indicated but not described in Hodgson's classified "Catalogue of Mammals of Nepal."—(Calc. Journ. N. H. vol. IV. p. 284, &c.)

Sub-Genus KIRIVOULA, *Gray, Ann. N. H. X. p.* 258.

66. *VESPERTILIO* (*KIRIVOULA*) *PICTUS*, *Pallas, Spicil.* 3, *p.* 7.

Vespertilio kirivoula, *Bodd., Elench. Anim. p.* 70. 1785.

Kirivoula picta, *Gray, Cat. Mamm. Br. Mus.* 27. *Cantor, Catal. p.* 15.

Vespertilio pictus, *Horsf., Zool. Research.*

LOWO-KEMBANG, of the natives of Java.

KIRIVOULA, of the natives of Ceylon: this name has been appropriated to the species by Boddaert, probably after the date of Pallas's description, *l. cit.*

HAB. Java, Sumatra, Borneo, Penang.

A. B. C. Horsfield's Collection from Java; besides many dried specimens.

67. *VESPERTILIO* (*KIRIVOULA*) *FORMOSA*, *Hodgson, Catal. of Mammalia from Nepal.*

Kirivoula formosa, *Gray, Cat. Mamm. Br. Mus.* 27. *Cat. of Hodgs. Coll. p.* 4.

Vespertilio formosa, *Hodgs. l. cit.*

HAB. Northern India.

A. Dried. Presented by Dr. Hugh Falconer.

This species represents the *V. pictus* in continental India. It is somewhat larger in size, and generally of a lighter colour; underneath, pale yellow.

NOCTILIONINA, *Gray, Catal. Mamm. Br. Mus. Syst. List, XIX.*

Genus TAPHOZOUS, *Geoff.*

SACCOPTERYX, *Illig.*
SACCOLAIMUS, *Kuhl.*

68. *TAPHOZOUS LONGIMANUS, Hardw.*

Taphozous longimanus, *Hardw., Trans. Linn. Soc. XIV. p.* 525, *t.* 17. *Temm., Monogr. II.* 289. *Gray, Cat. Mamm. Br. Mus. p.* 33. *Blyth, J. A. S. Beng. XIII. p.* 490.

HAB. Continental India; abundant in many localities.

A. B. Presented by the Asiatic Society of Bengal.

Several dried specimens from different localities.

General Hardwicke states that this Bat is common in Calcutta in dark store-rooms; at night it frequents habitations, attracted by the light of candles and numerous insects. In his notices of various Mammalia (Journ. As. Soc. Beng. XIII. p. 490), Mr. E. Blyth informs us, "That he recently obtained thirteen individuals alive (of which two only were males) from the interval between a pillar and the wall against which it was placed. These Bats clung with perfect facility to the smooth mahogany back of a cage into which they were put, hitching their claws in the minute pores of the wood, and creeping upon it in a manner that was surprising."

69. *TAPHOZOUS MELANOPOGON, Temm., Monogr. II. p.* 287, *pl.* LX. *fig.* 8, 9, *head and cranium.*

HAB. Western coast of Peninsular India. Caves of Canara. It has also been noticed rarely in the district of Bantam, in Java, in the caverns inhabited by the esculent swallow.

A. From the Caves of Canara. Presented by Dr. Wight, of the Madras Medical Service.

Genus CHEIROMELES, *Horsfield, Zool. Research.*

DYSOPES, *Temminck.*
MOLOSSUS, *Fischer et al.*

70. *CHEIROMELES TORQUATUS, Horsfield, Zool. Research., with figures of the upper and lower side, and details of dentition.*

Molossus torquatus, *Fischer, Synops. Mamm. p.* 90.

Dysopes cheiropus, *Temm., Monogr. I. p.* 218, *&c.*

Cheiropus torquatus (?), *Müller, Verhandl. over Nat. Gesch. Tafel der Zoogdieren.*

A. Discovered by Mr. George Finlayson, while attached to the mission of John Crawfurd, Esq., to Siam and Cochin China. The precise locality is not known.

According to Dr. S. Müller, this species, or one nearly allied to it, has been found in Java, Sumatra, and Borneo. He adds to his account, that it is distinguished from the rest of the family not only by its disgusting exterior, and the nakedness of its body, but chiefly by a most offensive and nauseous odour which emanates from it. This odour is caused by a soft greasy substance, secreted in a small sinus, situate in a transverse fold of the skin, above the thorax. It is so pungent and offensive, that M. Van Oort, while employed in making a drawing of an individual, was afflicted with headach and nausea so severe, that he could only with difficulty complete his task.

Genus NYCTINOMUS, *Geoffr. et al.*

DYSOPES et MOLOSSUS, *Temm. et al.*

VESPERTILIONIS Spec., *Linn. et al.*

71. *NYCTINOMUS TENUIS, Horsf., Zool. Research.*

Dysopes tenuis, *Temm., Monogr. I. p.* 228, *with a figure pl.* XIX. *bis. Müller, Verhandl. over Nat. Gesch. Tafel der Zoogdieren.*

Molussus tenuis, *Lesson, Mamm. Fischer, Synops. Mamm. p.* 92.

LOWO-CHURUT, of the Javanese.

HAB. Java. Also Sumatra and Borneo, *Müller.*

A. Horsfield's Collection from Java.

Several dried specimens.

Allied to *N. plicatus*, Gray, Cat. Mamm. Br. Mus. p. 23, the *Vespertilio plicatus* of Buchanan (Linn. Trans. V. t. 13). *Nyctinomus dilatatus,* Horsf. (Zool. Research.), appears to be a variety of this species.

The Nyctinomi live during the day in hollow trees and rocky caverns. I found them very abundant in the hills of Prowoto, and

their pursuit afforded me occasional amusement. Soon after sunset they directed their flight in quick succession along the hedge which surrounded a village in which I had my abode, and I readily caught them with a large net.

Dr. S. Müller relates the following incident to show the vast numbers in which the species of Nyctinomus (*Dysopes*) occasionally congregate. "During my researches near the mountain Gede, in Java, some natives who were at work in a neighbouring rice plantation called my attention to a hissing noise, near a tall Rasamala tree, *Liquidambar altingiana*, Blum. The fissure from which it proceeded, being at a considerable distance from the ground, and the tree of a gigantic size, it was almost impossible to reach it by climbing; the tree was therefore cut down, when, to my astonishment, the interior of the fissure, although of considerable extent, was so completely covered by individuals of the *Nyctinomus* (*Dysopes*) *dilatatus*, that not the smallest spot remained unoccupied."

Order II. FERÆ.

Fam. FELIDÆ.

A. SANGUINARIA, *Gray, Cat. Mamm. Br. Mus. Syst. List, XIX.*

a. Felina.

Genus FELIS, *Linn. et al.*

72. *FELIS TIGRIS, Linn.*

Tigris regalis, *Gray, Cat. Mamm. Br. Mus. p.* 40.

The Royal Tiger, *Bennett, Tower Menag. with a fig.* 25.

BAGH, Sanskrit (pronounced Baugh).

PUTTITE WAGH, or Striped Tiger, of the Mahrattas, *Colonel Sykes.*

WAHAG, *Elliot, Cat. Mamm. Madras Journ. X.* 104.

RIMAU or HARIMAU, of the natives of Sumatra.

MACHAN, of the natives of Java.

HAB. Southern India, from the Indus to the south-east boundary of China. It is also found in Java and Sumatra, and probably in Borneo; but according to M. Temminck, Hindustan is its true birth-place. (Monogr. I. p. 89.)

A. From Dukhun. Presented by Colonel Sykes.

In the catalogue of Mammalia observed in Dukhun, Colonel Sykes states (p. 8), " Royal Tigers are so numerous in the province of Khandeish, that 1,032 were killed from the years 1825 to 1829 inclusive, as appears by official returns handed to me." They are equally numerous and destructive on the West coast of Sumatra, and in many parts of Java. In the " Tower Menagerie," p. 25 to 34, Mr. J. E. Bennett gives many interesting details of the history and habits of the Royal Tiger. The peculiarities of the Tiger, as observed in Java, are detailed by Dr. S. Müller (Over de Zoogdieren van den Ind. Archip. p. 52, &c.).

Walter Elliot, Esq., in the catalogue of Mammalia in the Southern Mahratta country, gives the following particulars relative to the habits of the Tiger (Madras Journ. of Literature and Science, vol. X. p. 105). " The female has from two to four young, and does not breed at any particular season. Their chief prey is cattle, but they also catch the wild hog, the *sambar*,* and more rarely the *spotted deer*.† It is naturally a cowardly animal, and always retreats from opposition until wounded or provoked. Several instances came to notice of its being compelled to relinquish its prey, by the cattle in a body driving it off. In one case, an official report was made of a herd of buffaloes rushing on a tiger that had seized the herd-boy, and forcing it to drop him. Its retiring from the wild dog has already been adverted to. Though the wild hog often becomes its prey, it sometimes falls a victim to the successful resistance of the wild boar. I once found a full-grown tiger newly killed, evidently by the rip of a boar's tusk; and two similar instances were related to me by gentlemen who had witnessed them, one of a tiger, the other of a panther. It is generally believed that a tiger always kills his own food, and will not eat carrion. I met with one instance of a tigress and two full-grown cubs devouring a bullock that had died of disease. I saw the carcass in the evening, and next day, on the report of tigers having been heard in the night, I followed their track, and found they had dragged the dead animal into the centre of a corn-field, and picked the bones quite clean; after which, they found a buffalo, killed it, and eat only a small portion of it. Another instance was related in a letter from a celebrated sportsman in Kandeish, who having killed a tigress, on his return to his tents, sent a pad elephant to bring it home. The messenger returned, reporting that on his arrival he found her alive. They went out next morning to the

* *Rusa Hippelaphus.*

† *Axis maculata.*

spot, and discovered that she had been dragged into a ravine by another tiger, and half the carcass devoured. They found him close by, and killed him also.

"The Bheels in Kandeish say, that in the monsoon, when food is scarce, the tiger feeds on frogs; and an instance occurred some years ago in that province of one being killed in a state of extreme emaciation, from a porcupine's quill that had passed through his gullet, and prevented his swallowing, and which had probably been planted there in his attempts to make one of these animals his prey. Many superstitious ideas prevail among the natives regarding the tiger. They imagine that an additional lobe is added to his liver every year; that his flesh possesses many medicinal qualities; that his claws, arranged together so as to form a circle, and hung round a child's neck, preserve it from the effect of the evil eye; that the whiskers constitute a deadly poison, which for this reason are carefully burnt off, the instant the animal is killed. Several of the lower castes eat his flesh."

73. *FELIS LEOPARDUS*, *Schreb., Saength. p.* 387.

Felis leopardus, *Temm., Monogr. I. p.* 92. *Linn., Syst. Nat. ed. Gmel. I. p.* 77. *Sykes, Cat. of Mamm. from Dukhun, p.* 8. *Fischer, Syn. Mamm. p.* 199.

Cheeta, literally the painted animal, of the Mahrattas, who apply the same name to the Hunting Leopard.

Harimau bintang, of the Malays of the peninsula of Malacca, *Cantor*.

Hab. Many parts of Africa, according to M. Temminck. India generally, Malayan peninsula; but according to Dr. S. Müller has not been found in the Indian Archipelago.

A. Specimen from Dukhun. Presented by Colonel Sykes.

M. Temminck, in his Monograph of the genus Felis, I. p. 92, states in detail the characters by which the *Leopard* is distinguished from the *Panther*. Colonel Sykes, who had opportunities of observing both species in their native localities, gives the peculiarities of the Leopard as follows: "It is a taller, longer, and slighter built animal than the next species, which I consider the *Panther*. It differs also in more of the ground colour being seen, and in the rose spots being much more broken. The natives of Dukhun consider the Leopard and the Panther next enumerated as distinct species. The Leopard is rare; the Panther

very abundant. The only specimen of the Leopard which I was enabled to obtain, has been presented to the Company's Museum."

A black variety of this, as well as of the next species, is occasionally met with. Pennant, in his History of Quadrupeds, describes and figures an individual which was brought to England by Warren Hastings.

Panthère noire, *De la Méthéric, in Journ. de Phys. XXXIII. p.* 45, *t.* 2.

74. *FELIS PARDUS, Linn., Syst. Nat.* 12, *p.* 61.

Felis pardus, *Temm., Monogr. I. p.* 99. *Sykes, Catal. of Mamm. from Dukhun, p.* 8. *Fischer, Syn. Mamm. p.* 200. *Müller, over de Zoogdieren van den Indischen Archip. p.* 29 *and p.* 52.

The Panther.

Beebeea Baugh, of the Mahrattas, *Col. Sykes.*

Gorbacha, Dukhani, *Walter Elliot, Esq., Cat. Mamm. Madras Journ. X. p.* 106.

Machan or Meong tootool and Machan batekh, of the natives of Java.

Hab. Continental India. Dukhani, *Colonel Sykes.* The Southern Mahratta Country, *W. Elliot, Esq.* Java and Sumatra, *Dr. S. Müller.*

A. From Dukhun. Presented by Colonel Sykes.

B. Horsfield's Collection from Java.

C. From Continental India.

" This species," Colonel Sykes observes, " is so abundant that 472 were killed from 1825 to 1829 inclusive, in the four collectorates of Dukhun. It differs from the Leopard in its smaller size, stouter make, darker ground colour, and in its crowded rose rings."

Dr. S. Müller, in mentioning the habits which distinguish the Panther from the Leopard and the Tiger, states that the former is occasionally found, in solitary deserts, during the day, sleeping stretched across the fork of a large bough. Sir T. S. Raffles relates the same as the habit of the Rimau Dahan, or *Felis macroscelis.*

Walter Elliot, Esq., in his Catalogue of the Mammalia in the Southern Mahratta country, indicates two varieties of *Felis pardus,* Linn., namely, the *Honega* of the Canarese, and *Kerkal,* Canarese,

which is the *Gorbacha*, Dukhani, above mentioned. He states, " The strongest marked difference of character that I observed was in the skulls, that of the *Honiga* being longer and more pointed, with a ridge running along the occiput, and much developed, for the attachment of the muscles of the neck, while those of the *Kerkal* were rounder, and the bony ridge was wanting. If this character is universal and permanent, it will afford a good ground of distinction."

75. (Var. β.) *FELIS MELAS*, *Péron et Lesueur.* (Dark variety.)

Felis melas, *Desmar., Mamm. p.* 223.
MACHAN KOOMBANG, of the Javanese.
HARIMAU KÚMBANG, of the natives of Sumatra, and of the Malays of the Peninsula, *Dr. Cantor.*

A. Horsfield's Collection from Java.

This is now uniformly admitted to be a black variety of the *Felis pardus.* M. Temminck states (Monogr. I. p. 97), on the authority of Professor Reinwardt and M. Kuhl, that both the common and black Panther are in Java occasionally found in the same den.

Sub-genus LEOPARDUS, *Gray.*

76. *FELIS (LEOPARDUS) PARDOCHROUS*, *Hodgs.*

Felis pardochrous, *Hodgs., Catal. of Mamm. of Nepal. Calcutta Journ. Nat. Hist. IV. p.* 286.
Felis nipalensis, *Hodgs., Journ. As. Soc. Beng. I. p.* 341, *X. p.* 908, nec non bengalensis. *Not Vig. and Horsf.*
Leopardus Ellioti, *Gray, Ann. Nat. Hist. X. p.* 260. *Cat. Mamm. Br. Mus. p.* 44. *Cat. Hodgs. Coll. p.* 6.

HAB. Nepal and Tibet.

A. Presented by B. H. Hodgson, Esq.
B. A skin. From the same.

77. *FELIS (LEOPARDUS) HORSFIELDII*, *Gray, Ann. Nat. Hist. X. p.* 260.

HAB. Darjiling.

A. Presented by J. T. Pearson, Esq.
B. Presented by J. McClelland, Esq.

78. *FELIS (LEOPARDUS) JAVANENSIS, Desm., Dict. d'Hist. Nat. VI. p.* 115. *Mamm. p.* 229.

Felis javanensis, *Horsf., Zool. Res., with a figure. App. to Life of Sir T. S. Raffles, p.* 636.
Leopardus javanensis, *Gray, Cat. of Mamm. Br. Mus. p.* 43.
Felis undata, *Desm.* (Var. *a.*) *Fischer, Syn. Mam. p.* 205.
Felis minuta, *Temm., Monogr. I. p.* 132. *Müller, over de Zoogdieren, &c. p.* 54.
Felis diardi, *Griffith. Gray, Cat. Mamm. Br. Mus. p.* 43.
(Var. *a.*) Felis ———, Wagati, of the Mahratta Ghats, *Elliot, Mamm. of Southern Mahratta country.*
Kuwuk, of the natives of Java.

Hab. Java. According to Dr. S. Müller, also Sumatra and Borneo.

A. Horsfield's Collection from Java.

The *Felis javanensis*, or Kuwuk, is found in large forests in every part of Java. It forms a retreat in hollow trees, where it remains concealed during the day; at night it ranges about in quest of food, and often visits the villages at the skirts of the forests, committing depredations among the hen-roosts. The natives ascribe to it an uncommon sagacity, asserting, that in order to approach the fowls unsuspected, and to surprise them, it imitates their voice. It feeds chiefly on fowls, birds, and small quadrupeds, but in case of necessity, it also devours carrion.

This animal is perfectly untameable; its natural fierceness is never subdued by confinement.—(Horsfield, Zool. Research.)

79. *FELIS (LEOPARDUS) SUMATRANUS, Horsf. Sp.*

Felis sumatrana, *Horsf., Zool. Research., with a figure. App. to Life of Sir T. S. Raffles, p.* 636.
Leopardus sumatranus, *Gray, Cat. of Mamm. Br. Mus. p.* 43.
Felis minuta, *Temm., Monogr. I. p.* 133. *Müller, over de Zoogdieren, &c. p.* 54.
Felis undata, *Desm.* (Var. *β.*) *Fischer, Syn. Mam. p.* 205.
Rimau bulu, of the Malays.

Hab. Sumatra.

A. Presented by Sir T. S. Raffles.

80. *FELIS (LEOPARDUS) BENGALENSIS, Desm. Sp.*

Felis bengalensis, *Desm., Mamm. Suppl. p.* 541. *Fischer, Syn. Mamm. p.* 205.

Leopardus inconspicuus, *Gray, Cat. Mamm. Br. Mus. p.*44.

Bengal cat, *Penn., Quadr. I. p.* 272.

Ban-birâl and Khupyá-bagh, of the Bengalese.

Hab. Bengal.

A. Presented by General T. Hardwicke.

B. A drawing from the Collection of Dr. F. (Buchanan) Hamilton.

81. *FELIS (LEOPARDUS) TORQUATUS, Fred. Cuv. et Geoffr. Sykes, Catal. of Mamm. from Dukhun, p.* 9.

Felis bengalensis, *Desm. Fischer, Syn. Mamm. p.* 205.

Leopardus inconspicuus, *Gray, Mag. Nat. Hist.* 1837.

Felis nipalensis, *Vig. and H., Zool. Journ. IV. p.* 388. *Tab. Suppl. xxxix ?*

Lhan Rahn Manjur, or lesser wild cat, of the Mahrattas, *Sykes.*

Hab. Dukhun, and other parts of India.

A. Presented by Colonel Sykes.

On the habits of this species, Colonel Sykes states: "This animal is a pest, from the damage it does in poultry-yards in Dukhun. It inhabits the grass roofs of houses, and thick hedges, and obscure places of our cantonments, shunning the face of man and the light, but is constantly on the alert at night. The sexes resemble each other in colour, marks, and size."

82. *FELIS (LEOPARDUS) MURMENSIS, Hodgs. Sp.*

Felis murmensis, *Hodgs., Proceed. Zool. Soc.* 1832, *p.* 10; 1834, *p.* 97. *Journ. As. Soc. Beng. X. p.* 908. *Calc. Journ. Nat. Hist. IV.* 286. *Gray, Cat. Mamm. Br. Mus. p.* 41. *Cat. Hodgs. Coll. p.* 5.

The Murmi, *Cat. Hodgson, Journ. As. Soc. B. I. p.* 341.

Hab. Nepal; central hilly regions.

A. Presented by Dr. N. Wallich.

83. *FELIS (LEOPARDUS) VIVERRINUS, Bennett Sp.*

Felis viverrinus, *Bennett, Proceed. Zool. Soc.* 1833, *p.* 68.

Leopardus viverrinus, *Gray, Cat. Mamm. Br. Mus. p.* 43. *Hodgs., Pr. Z. S.* 1834, *p.* 93.

Felis viverriceps, *Hodgs., Journ. A. Soc. B. V. p.* 232. *Calc. Journ. Nat. Hist. IV. p.* 286. *A figure in Gray and Hardwicke's Illustr. of Ind. Zool. vol. II. fig.* 4.

Felis celidogaster, *Temm., Monogr. I. p.* 140. *Gray, Cat. Hodgson's Coll. p.* 6. (The locality of the specimen described, which was purchased at the sale of Bullock's Museum in London, is very doubtful.)

HAB. Open lower regions of Nepal and Tarai.

A. Presented by B. H. Hodgson, Esq.

Sub-Genus (LYNX) *Auctor.*

LYNCUS, *Gray and Hodgson.*

CHAUS, *Gray.*

84. *FELIS (LYNX) CHAUS*, † *Güldenst. Sp.*

Felis chaus, *Güldenst., Nov. Comm. Petr. XX. p.* 483, *T.* 14. *Temm., Monogr. I.* 121. *Fischer, Syn. Mamm. p.* 209. *Linn. Syn. Nat. ed. Gmel., I.* 82. *Desmar., Mamm. p.* 226. *Rüpp., Zool. Atl. p.* 13, *t.* 4, *o.* *Sykes, Cat. Dukh. Mamm. p.* 9.

Chaus lybicus, *Gray, Cat. Mamm. Br. Mus. p.* 45. *Cat. Hodgs. Coll. p.* 7.

Felis kutas, *Pearson.*

(Var. *α*.) Lynchus erythrotus, *Hodgs., Cat. Mamm. Journ. A. Soc. B. X. p.* 908.

(Var. *β*.) Felis affinis, *Gray and Hardw. Illust. Ind. Zool. I. pl.* 3.

Chaus, *Shaw, Gen. Zool. I.* 373.

MOTA RAHN MANJUR, or lesser wild cat, of the Mahrattas, *Col. Sykes.* — Hind. Siah-Goesh

HAB. Egypt, the Caspian, Persia, India.

A. From Dukhun. Presented by Colonel Sykes.

B. From Madras.

C. and D. (Var. *a*.) From Griffiths' and Hodgson's Collections.

E. Drawing from Dr. F. (Buchanan) Hamilton.

F. Drawing of var. *a*. with spotted abdomen. From the same.

† Memo. A Siah Goesh, said to be taken on the confines of Tartary was presented by Jaffier Ally to Clive who sent the animal to Wm Pitt. The latter presented it to George III, who had it placed in the Tower Menagery. — Vide Annual Register for 1759. 8th Edition, page 119. under date 26 October.

"This species," Colonel Sykes remarks, "has a very extended geographical range, being found in Egypt, on the Caspian, in Persia, at Bangalore, and in Dukhun. It frequents bushy moist situations. The only addition I can give to the published descriptions of it is, that the irides are of a bright reddish light yellow."

Several of the smaller species of Felis above enumerated, have a very close family resemblance, and zoological writers are not agreed as to their specific distinctions. This remark applies, in the first instance, to the *Felis javanensis* of Cuvier and Desmarest, and the *Felis sumatrana* of Horsfield, which M. Temminck (Monogr. I. p. 133) unites (with indications of several other small species) under his *Felis minuta*, a name which doubtless may combine several species of the genus, without clearly indicating their respective distinctions, and in the second place, to *Felis bengalensis*, Desmarest, *Felis torquata*, Fred. Cuv., and *Felis* (*Leopardus*) *inconspicuus*, Gray, the characters of which are by no means satisfactorily defined; further comparisons of individuals from different localities are therefore required to determine the respective rank of the species here enumerated.

Genus PRIONODON, *Horsfield, Hodgson, et al.*

FELIS, Sect. II.

PRIONODONTIDÆ, *Horsfield, Zoological Researches in Java,* 1823.

LINSANG, *Müller, Gray.*

85. *PRIONODON GRACILIS, Vigors and Horsfield. Appendix to Life of Sir T. S. Raffles,* 1830. *Cantor, Catalogue of Mammalia inhabiting the Malayan Peninsula.*

Viverra? linsang, *Hardwicke, Trans. Linn. Soc. XIII. p.* 235, *tab.* 24.

Viverra gracilis, *Desmar., Mamm. Suppl. p.* 539.

Linsang gracilis, *Müller, Over de Zoogdieren van den Indischen Archipel. p.* 28. *Gray, Mamm. in Br. Mus. p.* 48.

DELUNDUNG, of the inhabitants of the eastern extremity of Java.

MACHAN TJONGKOK, of the Sunda or Western Javanese.

HAB. Java, Sumatra, Siam, and the Peninsula of Malacca. A rare animal.

I discovered the Delundung during the early period of my researches

in the district of Blambangan, situated at the eastern extremity of the island of Java. It inhabits the extensive forests, which, with the exception of the capital of Banyuwangi, and a few small villages, cover this district, but it is very seldom captured. Of its habits, the natives could give me but little information. This deficiency is in part supplied by Dr. Cantor, who obtained an individual during his researches in the Malayan Peninsula, respecting which he states :—

Mr. Rappa, for many years a dealer in objects of natural history at Malacca, who previously had been supplied with a figure and description of *Prionodon gracilis*, reported in a memorandum accompanying the specimen that it had been captured in the jungle at some distance from Malacca. It was unknown to himself and to the natives. At first the animal was fierce and impatient of confinement, but by degrees it became very gentle and playful, and when subsequently suffered to leave the cage, it went in search of sparrows and other small birds, displaying great dexterity and unerring aim in stealthily leaping upon them. Fruit of every description it refused.

Dr. S. Müller, in the work above cited, informs us, in confirmation of the preceding remarks, that " the Prionodon is one of the rarest mammalia of India, he having, during the period of his researches in the Archipelago, obtained only two individuals, one of which was captured at an elevation of about 4,000 feet above the ocean, on the mountain Pangorango, situated south of Batavia. The other was from the district Indrapura, in Sumatra. In its habits this small but very bold and rapacious quadruped resembles the Herpestes and Viverræ, while its form, short and close fur, and its colour, shows an affinity to the Cats: it may therefore be considered intermediate, between Felis and Viverra."

86. *PRIONODON PARDICOLOR*, *Hodgson*, *Calcutta Journal of Nat. Hist. II. p.* 57. *Journ. A. S. Beng. X. p.* 909.

Linsang pardicolor, *Gray, Mamm. in Br. Mus. p.* 49. *Catal. of Hodgson's Coll. p.* 8.

Hab. Sikim and Nepal, near the Himalayas.

A. Presented by B. H. Hodgson, Esq.

In the second volume of the " Calcutta Journal of Natural History," 1842, p. 57, &c., Mr. Hodgson gives the following copious details of this new species of Prionodon. " The teeth answer exactly to Dr. Horsfield's formula of Prionodon, whilst the feet are most completely feline, with the requisite exception of the fifth posterior digit, which is here

present, though wanting in Felis. These are the essential marks of the genus Prionodon, and are found in our animal, as in the generic type, united with a vermiform structure and inferior size, such as are seen in the lesser civet cats of India, or that form, between which and the true cats, the Prionodons take their place.

"Our little animal further approaches the cats and the type of Prionodon by its soft glossy fur, which is closer and finer than in any species of civet. Head, elongate-conic, compressed, viverrine, with the eyes placed at equal distance between the nose and the anteal base of the ear; muzzle, or nude extremity of the nose, small, rounded, distinct, slightly grooved above and in front, and having the nares opened anteally and laterally; lips, adpressed, and furnished with very long but rather soft mustachios; smaller tufts above the eye and on the cheek, none on the chin; ears, fully developed, placed high up, ovoid, rounded at the tips; the helix considerably attached to the scull anteriorly, and furnished posteriorly with a simple fissure; softly furred behind and on the margin interiorly; the rest of the interior nude, and hid by the longer hair springing from the fore part of the helix; head and body, both considerably elongated and slender; limbs, short, fine, feline, but the thumbs rather nearer to the other digits than in Felis, and a corresponding digit to the hinder extremities; talons, very acute, and entirely sheathed and concealed; tail, equal to the body and neck, perfectly cylindric, and furred like the rest of the animal's skin.

"'Anal pouch,' very apparently present, but the exact character of it not determinable; tongue, aculeated backwards. The colours of the animal are very rich and beautiful, resembling closely, and no way yielding in beauty to those of the leopard, the ground being an uniform rich pardine fulvous, and the marks jet black. The marks too are almost wholly rounded as in the leopard; but they are full or entire, that is, have not open centres; and upon the neck (superior) they take that linear character which is nowhere seen in the leopard. Lips, chin, inferior surface of head, neck, and body, together with the toes, immaculate; bridge of nose and superior surface of head, mixed with dusky but no distinct marks; a vague spot or two on the cheeks; ears, outside black, inside pale; immediately behind them arise two unbroken lines proceeding to a little beyond the shoulders, and two more below these, proceeding brokenly to them only; rest of the upper and lateral surfaces of the body covered with large round entire black marks, of which six or seven may be counted longitudinally from the shoulders to the base of the tail, and eight transversely, those nearest the dorsal

ridge being the largest, and the others gradually lessening as you descend the flanks and limbs, the latter of which, outside, are spotted to the base of the digits; tail, banded with sixteen or seventeen nearly equal and perfect rings of alternate black and fulvous, the last ring being vague with mixed hues, and dusky tip to the tail, and the dark caudal rings upon the whole the larger; mustachios, dark; nude skin of nose and pads of the feet of a fine fleshy pink hue. So far as can be judged by the skins, the dimensions agree most closely with those of Horsfield's type, or *P. gracilis,* being about sixteen inches long, and thirteen to fourteen more for the tail, with a mean height of about six inches. The animals are said to have the manners of cats, to spring and climb with great power, to prey on small mammals and birds, and to frequent trees much in search of the former, as well as for shelter. The following specific character may serve to mark our animal: Prionodon, with rich pardine hues, or rich orange buff spotted with black; the neck above, with irregular lines; the body above and laterally, with large entire round marks, eight in transverse and seven in longitudinal series, diminishing in size from the dorsal ridge, and extending outside the limbs to the digits; below, entirely immaculate; tail, with eight or nine nearly equal and perfect rings of each of the hues of the body, or black or ruddy yellow. Habitat, the Sub-Himalayan mountains; not known in the plains."

B. NECROPHÆGA, *Gray, Cat. Mamm. Br. Mus. Syst. List, XX.*

c. Viverrina.

Genus VIVERRA, *Pr. S. D.*

VIVERRÆ Species, *Linn.*

87. *VIVERRA ZIBETHA*, *Linn. Syst. Nat. ed. XII., I. p.* 65; *ed. Gmel., I. p.* 89. *Gray and Hardw., Illust. Ind. Zool. II. t.* 5.

Viverra undulata, *Gray, Spic. Zool. t.* 8.

Viverra melanura, orientalis, and civettoides, *Hodgs., Mammalia of Nepal, J. A. S. Beng. X. p.* 909, *are cited by Gray in the Catalogue of Hodgson's Collection in Br. Mus. as varieties of* V. zibetha.

Zibet, *Shaw, Gen. Zool. I. p.* 398.

KHATTÁS, Sansk, *Wilson's Dictionary.*

TANGGALONG, of the Malays, *Marsden.*

HAB. Bengal, Nepal, the Malayan Peninsula, and Southern China.

A. Presented by the Asiatic Society of Bengal.

B. Presented by John McClelland, Esq., B.M.S.

This animal, as well as several other species of this and of the following sub-genus (Viverricula), produces the well-known odoriferous perfume or drug called Civet by Europeans, Zabát by the continental Indians (*Shakespear*), and Jebát and Dedes by the Malays (*Marsden*). It is a secretion formed in a large double glandular receptacle situated beneath the root of the tail. In many countries of the east, the Civet-cat is kept in cages for the supply of this drug, which is collected periodically at short intervals. Its habits in a wild state are predatory, sanguinary and ferocious in the highest degree, and they are but little changed in a state of confinement.

A detailed account of the Civet-cat, or Kuttauss as it is termed in Bengal, is given by Williamson in the "Wild Sports of the East," from which the following is an extract. "This animal is, perhaps, the most obnoxious of all the wild tribes known in India. It is seldom, if ever, seen on a plain, except at night, when it leaves its haunts in quest of prey. The kuttauss is remarkably bold, sparing nothing which it can overcome, and frequently killing, as it were, merely for sport. Its principal devastations are among sheep and swine, from which it purloins the young, and commits dreadful havoc among poultry. To the rapacity of the wolf, it joins the agility of the cat and the cunning of the fox. Its figure is a strange compound of the fox and polecat, its head being long and sharp with pricked ears, its body low and long, and its tail rather long but not very bushy. Its claws are concealed at pleasure. The colour of its body is a dirty ash-colour, somewhat striped with a darker shade, and its tail has many rather indistinct circles of the same tint.

"This obnoxious animal is generally found in short underwood covers, mixed more or less with long grass, and especially where Palmyra or Cocoa trees are to be seen. Although it is sometimes met with in various detached jungles, yet, for the most part, its residence is confined to such as border old tanks or jeels. These banks being formed by the excavation, are often very high and broad; with time, they settle and become flatter, and are generally overrun with very strong brambles, through which even an elephant could not make his way without extreme difficulty. Of such covers the kuttauss is a regular inhabitant, seldom stirring in the day, during which time he

appears to hide himself in the most opaque recesses. Such is the caution with which the kuttauss acts by night, that his depredations are ordinarily attributed to jackals, &c. Being, from his size, which is equal to that of a full-grown English fox, able to bear away a substantial booty, he is also capable of making a powerful resistance, and, being familiar to trees, into which he can ascend with facility, it is not a very easy thing to overcome him. His bite is very sharp; and such is the strength of his jaws, that sometimes he is found to snap the legs of such dogs as incautiously subject their limbs to his powers. Like the camel, he has a very uncouth trick of keeping a fast hold, though worried by a dozen of sturdy dogs, all tugging at various points. This we may presume operates much in his favour when seizing a prey. Jackals and foxes, and even wolves when close pursued, especially if hit with a stick or a stone, frequently drop what they have seized, and content themselves with an escape. The kuttauss is so very secret in his operations, that, were not the bones of his victims found in his haunts, one might almost doubt whether he were carnivorous. Hounds are wondrously incited by the scent of a kuttauss; it seems to derange them; they defy all control, and, often disregarding the voice of the hunter, as well as the sickness occasioned by the nauseous stench of the animal, remain in the cover, barking and baying, until a sharp bite sends them off howling, after which they show great aversion from a fresh attack. If a jackal or other hunted animal cross near the haunt of a kuttauss, he rarely fails to make his escape. The dogs all quit the chase, and surround the stinking animal. Whether they be successful in killing, or not, it matters little, for their scent is completely overcome for that day; and the hunter may assure himself that unless a jackal may take to a plain, and be run in open view, no chance exists of killing him. Indeed, after having worried a kuttauss, dogs treat all other game with perfect indifference. It is a curious fact that jackals, foxes, and kuttausses are most numerous near to the villages inhabited by the Mussulmans. This, probably, is to be attributed to their rearing poultry, which the Hindoos never do. Although fowls are very cheap throughout India, being generally from two-pence to four-pence each, yet one may travel a whole day through a populous country without being able to obtain either an egg or a chicken. The Hindoo religion proscribes them as being unclean; whence a native of that persuasion will not even touch one! It is from the Mussulmans alone that poultry can be obtained, though they are occasionally reared by the lower castes or sects, who are considered as perfect outcasts, and are only tolerated on account of the convenience they afford

by occupying the most menial offices, or by following the lowest occupations."

In the first volume of the "Calcutta Journal of Natural History," there is an account of a species of Civet-cat, nearly resembling the *Viverra zibetha*, by John McClelland, Esq., the title of which to the rank of a distinct species, remains for a comparison of further specimens. Mr. McClelland concludes his description with the following remarks: "The different animals of the Civet kind are in India called Khatás. There is one in Bengal, probably *V. indica*, Geoff., which is very common, and has been known even to enter houses in Calcutta at night in search of poultry. A few months ago, an instance of the kind occurred in a house surrounded by a high wall, and in which there were several dogs. The Khatás, on finding itself pursued, entered a large pond, and appeared to rely with much confidence on its dexterity in the water for its safety."

88. *VIVERRA TANGALUNGA*, *Gray*, *Proceed. Zool. Soc.* 1832, *p.* 63.

Viverra zibetha, *Raffles, Trans. Linn. Soc. XIII. p.* 251. *Appendix to Life of Sir T. S. Raffles*, 635. *Fred. Cuv., Mamm. lithogr.?* *Müller, Over de Zoogdieren van den Indischen Archipel.*

Viverra tangalunga, *Cantor, Mamm. of the Malayan Peninsula, &c.*

TANGGALUNG, of the Malays in Sumatra, *Raffles* and *Marsden.*

MUSANG JEBAT, of the Malays of the Peninsula, *Cantor.*

HAB. Sumatra, *Raffles.* Borneo, Celebes, Amboyna, *Müller.* Penang and the Malayan Peninsula, *Cantor.*

A. Presented by Sir T. S. Raffles.

The character by which this species is chiefly distinguished from the *Viverra zibetha* of Linnæus, is stated by Mr. Gray in the Proceedings above cited, to be a continuous longitudinal band occupying the upper surface of the tail, the numerous irregular rings being separated only on its inferior half. It is also more slender in form, and the black bands of the throat are different from those of the continental Civet-cat. Placed side by side, Dr. Cantor states, the living animals present a marked dissimilarity of countenance, which, although obvious to the eye, would be most difficult, if possible at all, to convey in words. Sir T. S. Raffles informs us that the animal is kept by the natives of Sumatra for the purpose of obtaining the perfume which they call jibet or dedes. The Tanggalung

is, in the Indian Archipelago, the representative of the Khatás of the continent of India; in its habits it is equally predatious, sanguinary, and untameable.

Sub-genus VIVERRICULA, *Hodgson.*

Essential character: Size, small, scansorial; habit, vermiform; nails, more or less raptorial, and thumb remote; pouches, as in Viverra.—(Hodgson, J. A. S. B., X. p. 909.)

89. *VIVERRICULA INDICA*, *Geoff. Sp.*

Viverra indica, *Geoffr., Collect. du Mus. Desmar., Mamm. p.* 210. *Sykes, Catal. of Mammalia observed in Dukhun, p.* 7. *Elliot, Catal. of Mamm. of S. Mahratta country, p.* 102. *Madras Journ. Lit. and Sc.*

Viverra malaccensis and V. Rasse, *Gray, Cat. Mamm. Br. Mus. p.* 48, *and Cat. Hodgs. Coll. p.* 8.

Viverricula indica, *Hodgson, J. A. S. B., X. p.* 909. *Calc. J. N. H. II. p.* 47.

Viverricula Malaccensis, *Cantor, Cat. Mamm. of Malayan Peninsula, p.* 29.

Viverra gunda, *Dr. F. (Buchanan) Hamilton's MS. and Drawing, Mus. Ind. Comp.*

(Var. *a.*) Viverra pallida, *Gray and Hardw. Illust. Ind. Zool. II. pl.* 6.

JUWADEE MARJAR, or Civet-cat, of the Mahrattas, *Sykes.*

SAYER and BUGMYUL, in Tarai, *Hodgson.*

KASTURI, Southern Mahratta country, *Elliot.* (*Kasturi* is the name of Musk, and is applied to the animal from the similarity of the smell.)

HAB. The whole of Continental India, from Cape Comorin to the foot of the Himalayas.

A. Presented by Colonel Sykes.

B. Presented by B. H. Hodgson, Esq.

C. The pale variety. Presented by the Asiatic Society of Bengal.

D. A Drawing from Dr. F. (Buchanan) Hamilton's Collection.

The first distinct indication of this species is given by M. Geoffroy, in the Collect. du Mus. d'Hist. Naturelle; it has since been noticed by many zoologists; specimens are common in museums, and several va-

rieties have been described. Colonel Sykes informs us that there are two varieties in Dukhun, one inhabiting the woods along the Ghauts, the other the country eastward of the Ghauts. The *Viverra malaccensis* of Gmelin, which is considered by some zoologists as identical with the *V. indica,* rests on a drawing and description of M. Sonnerat, and requires the examination and comparison of authentic specimens from Malacca. In its habits, the *Viverra indica* resembles the *V. tanggalunga,* although it admits of partial domestication.

Mr. Hodgson informs us that these animals dwell in forests or detached woods and copses, whence they wander freely into the open country, by day (occasionally at least) as well as by night. They are solitary and single wanderers, even the pair being seldom together, and they feed promiscuously upon small mammals, birds, eggs, snakes, frogs, insects, besides some fruits and roots. In the Tarai, the larger Viverræ are found in uncultivated copses, and they are said further to protect themselves by burrowing, at least they are frequently taken in holes, whether made by themselves, or obtained by ejection of other animals. The Mushars, a low caste of woodmen, eat their flesh. The Tarai name of the larger animals is Bhraun, the hill name, Nit Biraloo. —(Calc. Journ. Nat. Hist. II. p. 55.)

90. *VIVERRICULA RASSE, Horsfield Sp.*

Viverra rasse, *Horsf., Zool. Research., with a figure. Proceed. Zool. Soc.* 1832, *p.* 23. *Appendix to Life of Sir T. S. Raffles, p.* 635. *Bennett, Tower Menagerie, p.* 103. *Schinz, Synops. Mamm. p.* 362. *Müller, Over de Zoogd. van den Ind. Archip. p.* 30.

Viverricula rasse, *Hodgs., J. A. S. B. X. p.* 909. *Classified Cat. of Mamm.*

Viverra malaccensis, *Gray, Cat. Mamm. Br. Mus. p.* 48. *Cat. Hodgs. Coll. p.* 8.

Viverra indica, *Fischer, Syn. Mamm. p.* 171.

Viverricula malaccensis, *Cantor, Cat. Mamm. of Malayan Peninsula, p.* 29.

Rasse, of the Javanese, from the Sanskrit Rasa.

Hab. According to Dr. Müller, the island of Java exclusively.

A. Horsfield's Collection from Java.

The Rasse is considered by many zoologists as a variety of the *Viverricula indica.* In the "Proceedings of the Zoological Society for 1832," pp. 22 and 23, I have endeavoured to demonstrate the essential peculiarities which belong to the Rasse, and by which it is clearly dis-

tinguished from the *Viverricula indica.* So far as has been ascertained, the Rasse belongs exclusively to Java. The first description of this animal is given in Horsfield's "Zoological Researches in Java," which also contains a figure. The Rasse is not unfrequently found in Java, in forests of moderate elevation above the level of the ocean. Here it preys on small birds and animals of every description. It possesses the sanguinary appetite of animals of this family in a high degree, and the structure of its teeth corresponds strictly with their habits and modes of life. In confinement, it will devour a mixed diet, and is fed on eggs, fish, flesh, and rice. Salt is reported by the natives to be a poison to it. The odoriferous substance, the *dedes* of the Javanese or jibet of the Malays, is collected periodically. The animal is placed in a narrow cage, in which the head and anterior extremities are confined; the posterior parts are thus easily secured, while the civet is removed with a simple spatula. It is perfectly untameable, and has not been known to propagate in a state of confinement.

The substance obtained from the Rasse agrees with the civet afforded by the *Viverra civetta* and *zibetha,* in colour, consistence, and odour. It is a very favourite perfume among the Javanese, and applied both to their dresses, and by means of various unguents and mixtures of flowers to their persons. Even the apartments and the furniture of the natives of rank are generally scented with it to such a degree, as to be offensive to Europeans; and at their feasts and public processions the air is widely filled with this odour.

Genus PARADOXURUS, *Fr. Cuv.**

VIVERRÆ Species, *Desmar., Horsf. et al.*

91. *PARADOXURUS TYPUS, Fr. Cuv. et Geoffr., Mammif. lithogr.*

Paradoxurus typus, *Temm., Monogr. II. p.* 315. *Desmar., Mamm. suppl. p.* 539. *Fischer, Syn. Mamm. p.* 158. *Gray, Catal. Mamm. Br. Mus. p.* 56. *Proceed. Zool. Soc.* 1832, *p.* 65. *Schinz, Syn. Mamm. p.* 381. *Sykes, Catal. of Dukhun Mammalia, Proceed. Zool. Soc.* 1831, *p.* 102. *Ogilby, Zool. Jour. IV. p.* 303. *Bennett, Tower Menagerie, p.* 107, *with a figure.*

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* In establishing this genus, M. Frederic Cuvier was led into an error by the distorted and monstrous condition of the specimen which served for his definition, in which the tail was unnaturally incurvated. The Dutch naturalists, who had unlimited opportunities of observing this animal in many localities, assert, uniformly,

Viverra hermaphrodita, *Pallas. Schreb. Saength. IV. p.* 426.
Viverra nigra, *Desmar., Mamm. p.* 208.
? Genette de France, *Buff., Hist. Nat. Suppl. III. p.* 236, *t.* 47.
Ood, of the Mahrattas.

Hab. Continental India.

A. Presented by Colonel Sykes.

While the *Paradoxurus typus* appears to be confined exclusively to Continental India, the *Paradoxurus musanga* is largely distributed through the Indian Archipelago, and as there exists a great family resemblance between the two species, they have frequently been considered identical. The colour of the *P. typus* is more uniform, and generally blackish, and the longitudinal bands along the back are obscure, while in the *P. musanga* they are more prominent and apparent. The former is very carefully described by M. Temminck (Monogr. Mamm. II. pp. 316, 7). A specimen in the Company's Museum, from the Collection of Mammalia made by Colonel Sykes in Dukhun, is banded longitudinally on the back, but the character of the hairy covering agrees with the descriptions of specimens contained in the Leyden and British Museums.

Colonel Sykes gives the following account of the habits and peculiarities of this species. "This animal, which is by no means rare in Dukhun, is always lively, and a specimen in my possession was remarkable for the energy with which *during the night-time*, it chased round the cage. Its carnivorous propensities were so strong that it snapped off and devoured the heads of all fowls that incautiously approached its cage; but on board ship it was fed entirely on rice and clarified butter. In the stomachs of some individuals examined at Poona, I found fruit, vegetables, and Blattæ or black beetles."

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that the tail is straight, and without any permanent inflection, and my own observations confirm this remark. M. Temminck (Monogr. Mamm. II. p. 312), has the following note on this point. "Gen. *Paradoxurus:* nom générique, donné à tout hasard par F. Cuvier, dont il faut se garder de rendre l'application strictement applicable à aucune des espèces de ce groupe. Nous conservons ce nom, tout vicieux qu'il est, vu qu'il se trouve adopté dans le plus grand nombre des catalogues méthodiques; toutefois nous prions d'observer que la queue, chez toutes les espèces du genre, est droite, lache et en aucune manière préhensible ou capable de s'enrouler autour des branches, comme le fait *l'arctícte Binturong;* leur queue ne diffèrede celle des autres *viverrins*, qu'en ce qu'elle est plus longue."

92. *PARADOXURUS MUSANGA*, *Raffles Sp., Catal. Sumatran Mamm.*

Viverra musanga, *Raffles, Trans. Linn. Soc. XIII. p.* 252. *Horsfield, Zool. Research. with a figure. Desmar., Mamm. Suppl. p.* 539. *Appendix to Life of Sir T. S. Raffles, p.* 635.

Paradoxurus musanga, *Gray, Proceed. Zool. Soc.* 1832, *p.* 66. *Temm., Monogr. II. p.* 317, *&c. Müller, Over de Zoogdieren van den Ind. Archip. pp.* 54, 5. *Cantor, Catal. of Malayan Mammalia, p.* 31.

Musang, a species of Viverra, *Marsden, Hist. of Sumatra, p.* 118, *t.* 12, *n.* 2.

Musang, of the inhabitants of Sumatra, *Marsden.*

Musang Bulan, of the Malays, *Raffles.*

Luwak, of the Eastern Javanese, *Horsfield.*

Tjaro-ko-os and Tjaro-bulan, of the Western Javanese, *Müller.*

Hab. The Indian Archipelago.

A. Adult, B. Young. Horsfield's Collection from Java.

B. Presented by Sir T. S. Raffles.

The *Paradoxurus musanga* has been observed by the Dutch naturalists in Java, Sumatra, Borneo, and Timor, and by Dr. Cantor in Penang, Singapore, and the Malayan Peninsula. Its great resemblance to the last species in external habit, proportions of extremities and tail, has already been mentioned, but in its markings and hairy covering it exhibits greater varieties. M. Temminck enumerates and describes nine varieties. In the adult individuals of the *musanga*, the body above, and the anterior parts of the neck and breast are variegated gray and black, inclining to tawny or isabella. The back is marked with longitudinal black bands, varying from five to seven, which are more distinct in young subjects; the sides are obscurely spotted, and the abdomen is paler; legs and tail, black or deep brown; ears, short and rounded; tail, somewhat longer than the body, gradually tapering to the end, covered with coarse hair; fur, composed of hair, somewhat stiff and bristly, not closely applied to the skin; head, blackish, with a transverse gray mark on the forehead, and a white spot between the eyes.

In its manners, the Musang is less ferocious and sanguinary than the Civets and Viverriculæ. It generally sleeps during the day.

If taken while young, it becomes patient and gentle during confinement, and receives readily animal and vegetable food. It requires little attention, and even contents itself with the scanty remains of the meals of the natives, with fish, eggs, rice, potatoes, &c., the structure of its teeth being particularly adapted to a vegetable diet. It prefers, however, delicate and pulpy fruits, but, when pressed by hunger, also attacks fowls and birds. It is most abundant near the villages situated at the confines of large forests. It constructs a simple nest in the manner of squirrels, of dry leaves, grass, or small twigs, in the forks of large branches, or in the hollow of trees. From these it sallies forth at night to visit the sheds and hen-roosts of the natives, in search of eggs, chickens, &c. Its rambles are also particularly directed to the gardens and plantations, where fruits of every description within its reach, and particularly pine-apples, suffer extensively from its depredations.

The coffee plantations in Java are greatly infested by the *Viverra musanga;* in some parts of the island it has on this account obtained the name of the coffee-rat. It devours the berries in large quantities, and its visits are soon discovered by parcels of seeds which it discharges unchanged. It selects only the ripest and most perfect fruits, and the seeds are eagerly collected by the natives, as the coffee is thus obtained without the tedious process of removing its membranaceous arillus.

The injurious effects occasioned by the ravages of the Luwak in the coffee plantations, are, however, fully counterbalanced by its propagating the plant in various parts of the forests, and particularly on the declivities of the fertile hills. These spontaneous groves of a valuable fruit in various parts of the western districts of Java, afford to the natives no inconsiderable harvest, while the accidental discovery of them surprises and delights the traveller in the most sequestered parts of the island.

93. *PARADOXURUS PREHENSILIS*, *Hamilton Sp.*

Ichneumon prehensilis, *Dr. Francis* (*Buchanan*) *Hamilton*, *MS.*

Viverra prehensilis, *Blainv. Desmar.*, *Mamm. p.* 208.

Paradoxurus prehensilis, *Gray*, *Proceed. Zool. Soc.* 1832, *p.* 66. *Temm.*, *Monogr. II. p.* 340, *notice compilée, &c. Bennett*, *Proceed. Zool. Soc.* 1834, *p.* 33. *Gray and Hardw.*, *Illust. Ind. Zool. II. plate* 9. *Catal. of Mamm. in Museum of Zool. Soc.* 1838, *p.* 22.

HAB. Continental India.

A. A drawing. Presented by Dr. Francis (Buchanan) Hamilton.

This species was described and introduced in M. Desmarest's Mammalogie, by M. de Blainville, from a drawing deposited in the Museum of the East-India Company. In the year 1834, a skin of an Indian mammal was presented to the Zoological Society by Lord Fitzroy Somerset, which was considered by J. E. Bennett, Esq., to belong to this species.—(Proceed. Zool. Soc. 1834, p. 33.)

Mr. Bennett thus describes it: "The general colour of the animal is a pale grayish brown, in which longer black hairs are sparingly intermixed on the sides. On the back of the head and neck, and along the middle line of the back, these black hairs are almost the only ones that are visible. On the loins they form three indistinct black bands, of which the lateral are in some measure interrupted. The head is brownish, with the usual gray mark both above and below the eyes, and there are some short gray hairs between the eyes and across the forehead. The limbs are brownish black, rather darker towards their upper part. The tail, at its base, is of the same colour as the back, and rapidly becomes black; the terminal fifth is yellowish white. The ears are rather large, and sparingly covered with short brownish hairs." This description agrees generally with Dr. B. Hamilton's drawing.

94. *PARADOXURUS TRIVIRGATUS, Reinwardt Sp.*

Viverra trivirgata, *Reinw., Mus. Leid.*

Paradoxurus trivirgatus, *Temm., Monogr. II. p.* 333. *Müller, Over de Zoogdieren van den Indisch. Archip. p.* 55. *Catal. of Mamm. in Museum of Zool. Soc.* 1838, *p.* 22.

Paguma trivirgata, *Gray, Catal. Mamm. Br. Mus. p.* 55. *Cantor, Catal. of Malayan Mamm. p.* 31.

HAB. Java and Sumatra, *Temminck.* Tenasserim, *Blyth.*

A. A flat skin, without the skull. Presented by the Asiatic Society of Bengal.

B. A young specimen, from Finlayson's Collection. Locality not known.

M. Temminck indicates three varieties of this species, the first of which agrees generally with the specimen presented by the Asiatic Society. The following is an abstract of its external character: "Above, sides, and anterior and posterior aspects (faces) of the limbs, ash-gray, with a silvery reflection; three parallel deep black longitu-

dinal bands extend along the back; head, cheeks, and basal half of the tail, blackish-gray; muzzle, circumference of the eyes, lower part of the limbs, and terminal half of the tail, pure black; chin, throat, and abdomen, whitish-gray."—(Monogr. II. p. 334.) M. Müller also indicates three distinct varieties.—(Over de Zoogd. van den Ind. Archip. p. 55.)

In the young specimen from Finlayson's Collection, the contrast of the gray and black colours is less distinctly marked; in other respects, it agrees with the adult specimen from Tenasserim.

95. *PARADOXURUS PALASSII, Gray, Proceed. Zool. Soc.* 1832, *p.* 67.

Paradoxurus albifrons, *Bennett, MS. fide Gray, Catal. Mamm. Br. Mus. p.* 55.

HAB. Continental India and Malacca.

A. Presented by J. McClelland, Esq.

This species can only be doubtfully enumerated in the Catalogue, as the characters in the half-grown specimen are not fully developed. In the "Proceedings of the Zoological Society for 1832," p. 67, Mr. J. E. Gray gives the first distinct description of this species from a specimen brought from India and presented to the menagerie by William Buchanan, Esq. A figure of this individual is contained in Gray and Hardw. "Illust. of Indian Zoology," vol. II. pl. 8. "The general colour is blackish-gray, paler on the abdomen. Along the back passes a broad black band, below which, on each side, are several ranges of black spots. The limbs and the tail, excepting a white tip, are black. The muzzle is blackish. A broad band across the forehead, a spot under each eye, and the cheeks are white. The throat is grayish-white."

96. *PARADOXURUS FINLAYSONII, Gray, Proceed. Zool. Soc.* 1832, *p.* 68.

HAB. Not known.

A. Drawing from Finlayson's Collection, while employed as Naturalist to the Mission of John Crawford, Esq., to Siam and Cochin China.

Mr. J. E. Gray concisely indicates this species, from the drawing above mentioned, as "pale brown, with a band across the middle of the muzzle, and another across the orbits, including the eyes, and expanding on the back of the cheek; the ears, and three continuous

narrow lines along the middle of the back, blackish-brown; the feet, blackish, and the tail, cylindrical."—(Pr. Zool. Soc. 1832, p. 68.)

97. *PARADOXURUS LEUCOTIS*, *Blyth*, *Mus. As. Soc. Beng.*

HAB. Tenasserim and Arracan.

A. Presented by the Asiatic Society of Bengal.

The specimen above mentioned, which is marked with a label of the Curator of the Asiatic Society, is the only evidence contained in the Company's Museum of this species. It does not appear to be described in the Asiatic Society's Journal, although an obscure notice is probably given in the Proceedings for April, 1848.—(Journ. As. Soc. Beng. XVII. p. 560.)

In expectation of a more detailed description by Mr. Blyth, the following brief notice of the external character is here introduced. Fur, rather long, soft, and silky, somewhat resembling that of the individuals of *Paguma*, to which genus our animal approaches in several points. The general colour of the upper parts of the body, neck, head, and two-thirds of the tail, is tawny; somewhat deeper, and inclining to reddish-brown on the back and sides; throat and abdomen lighter, and inclining to isabella. The thighs and legs agree with the upper parts; the feet are brownish. Extremity of the tail, which is very long, deep chestnut-brown. Whiskers, long, blackish-brown. From the tip of the nose, a medial white line extends along the head towards the forehead. The ears in our specimen are rather naked, of a pale yellowish tint, and scantily covered externally with thinly-scattered yellowish hairs.

Genus PAGUMA, *Gray*, *Proceed. Zool. Soc.* 1831, *p.* 95.

PARADOXURUS, *Hodgson*, *Temminck*, *Bennett*, *et al.*

98. *PAGUMA GRAYI*, *Bennett Sp.*

Paradoxurus Grayi, *Bennett*, *Proceed. Zool. Soc.* 1835, *p.* 118.

Paradoxurus nipalensis, *Hodgson*, *Asiatic Researches*, *XIX. p.* 76. 1836. *Journ. As. Soc. Beng. XI. p.* 279. *Calc. Journ. Nat. Hist. IV. p.* 287.

Paradoxurus bondar, *Temm.*, *Monogr. II. p.* 332, *fide Gray* (*Exclus. Syn.*).

Paguma Grayii, *Gray*, *Catal. Mamm. Br. Mus. p.* 54. *Catal. Hodgson's Collection*, *p.* 9.

HAB. Central region of Nepal, where it is very common, *Hodgson.*

A. Presented by B. H. Hodgson, Esq.

The genus Paguma was established and defined by Mr. J. E. Gray, in the year 1831.—(See Proceed. Zool. Soc. 1831, p. 95.) Although nearly allied to Paradoxurus, it is fully entitled to the generic rank assigned to it by Mr. Gray, who states, after giving the essential character,* "that in the number and disposition of its teeth, this genus agrees with Viverra, from which, however, it differs in their conformation. It is much like Ictides in colouring, but has about the face the pale marking of Paradoxurus. The skin has the odour of civet. From the genus Viverra, it is distinguished by the shape of its skull, the cerebral cavity being in it much larger, the space between the eyes broader, and the nose much broader and shorter." To this may be added that its hairy covering, or fur, is dense, woolly, and somewhat lengthened, being suited to the high regions of which it is native, while in the true Paradoxuri, which are found in Bengal and the Indian Archipelago, the fur is shorter and bristly. Another peculiarity of the Paguma is its uniform exterior, which is only slightly undulated or variegated with darker and lighter shades, without the prominent dark longitudinal bands and spots, which distinguish the Paradoxuri.

This species was first described by Mr. E. T. Bennett, from a living specimen in the gardens of the Zoological Society. "The fur of the animal, unlike that of *Par. typus*, F. Cuv., and some other closely-related species, is nearly of equal length, and is dense, and in some degree woolly. Its colour above, is light fulvous brown, showing in certain lights a strong cinereous tinge, owing to the black tips of many of the hairs. Beneath, it is lighter, and has a more cinereous tinge. The limbs are ash-coloured, and deeper in intensity towards the feet, which are black. The tail is, throughout, of the same colour with the body. The ears are rounded, covered with hairs, and nearly black. The face is black, with the exception of the forehead, of a longitudinal dash down the middle of the nose, and of a blotch-like short oblique band under each eye, these markings being gray. There are no traces of longitudinal bands or spots on the body. The separate hairs are

* Dentes primores $\frac{6}{6}$ æquales; laniarii $\frac{1}{1}\,\frac{1}{1}$; molares $\frac{6}{6}\,\frac{6}{6}$; quorum utrinque in maxillâ superiori, 3 falsi parvi compressi, 1 carnivorus brevis obtusè 3 lobus cum processu interno centrali, 2 tuberculares subquadrati internè sub-angustati anticè non producti; in maxillâ inferiore 4 falsi, 1 carnivorus, 1 tubercularis. Pedes postici plantigradi, ad calcaneum usque nudi callosi. Cauda longa attenuata.

dusky at the base, and pale yellowish in the middle; they are tipped with black."

In the nineteenth volume of the Asiatic Researches above cited, Mr. Hodgson informs us (pp. 76, 77), that "the more peculiar habitat of this species is the central region of Nepal, where it is very common; but it is also found in the northern, and occasionally in the confines of the southern region. It never quits the untamed forest, and very seldom the mountainous country...... I kept an individual of this species for four years, and though I took no pains to tame it, it exhibited many more signs of docility than I ever witnessed in the *P. hirsutus* (the Bondar). The stomach, too, of one which I shot in the forests of the central region, contained only seeds, leaves, grass, and unhusked rice. The caged animal was fed on boiled rice and fruits, which it preferred to animal food not of its own killing. When set at liberty, it would lie waiting in the grass for sparrows and mynas, springing upon them from the cover like a cat; and when sparrows, as frequently happened, ventured into its cage to steal the boiled rice, it would feign sleep, retire into a corner, and dart on them with unerring aim. Birds, thus taken by itself, it preferred to all other food.

"This animal was very cleanly, nor did its body usually emit any offensive odour, though, when it was irritated, it exhaled a most fetid stench, caused by the discharge of a thin yellow fluid from four pores, two of which are placed on either side the intestinal aperture."

Mr. Hodgson then describes the apparatus in detail by which this fetid fluid is produced. His details of the character of the fur, the external covering, and the general colour of this species, agree generally with those given by Mr. Bennett in the Proceedings of the Zoological Society above cited.

The length of this species, according to Mr. Hodgson, from the snout to the tip of the tail, is from forty-eight to fifty inches. The dimensions of the specimen in the Company's Museum, are—of the body and head thirty inches, of the tail twenty inches.

99. *PAGUMA BONDAR, Dr. F.* (*Buchanan*) *Hamilton Sp.*

Ichneumon bondar, *Dr. F.* (*Buchanan*) *Hamilton. Drawing, Mus. Ind. Comp.*

Viverra bondar, *De Blainville. Desmar., Mamm. p.* 210.

Paradoxurus bondar, *Gray, Proceed. Zool. Soc.* 1832, *p.* 66.

Paradoxurus Pennantii, *Gray, Proceed. Zool.* 1832, *p.* 66. *Gray and Hardw., Illust. Ind. Zool. II. pl.* 13.

Paradoxurus hirsutus, *Hodgson, Asiatic Researches, XIX. p.* 72.

MACHABBA and MALWA, *Hodgson.*

HAB. North Bihar and Nipalese Taraï.

A. A Drawing. Presented by Dr. F. B. Hamilton.

Science is indebted to B. H. Hodgson, Esq., for the first authentic, and, hitherto, the only account of this species of Paguma, published in the nineteenth volume of the Asiatic Researches, Calcutta, 1836.

"This animal," Mr. Hodgson states, "is known by the names of *Machabba* and of *Malwa* in the north *Bihar,* as well as in Nipalese Taraï; it is forty-five inches in length from the tip of the snout to the end of the tail, and about six pounds in weight. The length of the tail, inclusive of the hair projecting beyond its tip, is equal to that of the animal, exclusive, about an inch less. The female is somewhat smaller than the male, and rather paler coloured, but the difference is trivial, neither sex nor nonage causing any noticeable diversity in this species. The colour of the animal is a full clear yellow, largely tipped with black, and entirely void of marks or lines upon the body. The entire bridge of the nose, with the upper lip, the whiskers, and broad band thence proceeding over the cheeks, the ears, the chin and lower jaw, the fore-legs wholly, and the hind from the heel downwards, together with the terminal third of the tail, are black or black-brown. The region of the genitals, and a zone encircling the eyes posteriorly, are pure pale yellow. The soles of the feet and the snout are brownish fleshy gray. The nude part of the lips, the palate, tongue, and bare portions of the ears and of the genital regions, pure fleshy white.

"The fur is of two kinds, viz. hair and wool. The former is straight, elastic, not rigid, of great length, and free set, not even ordinarily applied to the body, and considerably erigible under excitement. It is two inches and a quarter long, and, for the most part equally so over the whole body and tail, the face only and the limbs being dressed in short adpressed fur. The colour of the hair is, generally for two-thirds from the root, yellow, and for the terminal third, black; but here and there a hair wholly black intervenes, and sometimes the hair has a third dusky ring towards the base. The wool is soft, wavily curved in its length somewhat more than half as long as the hair, and almost entirely of a yellow hue, though, close to the skin, it has a dusky colour.

"The females have four ventral teats, and produce, I understand, but one brood per annum. The habits of the species render them more

active by night than by day, a circumstance clearly provided for by the largeness of their eye, with its extremely convex cornea. They sleep rolled up like a ball; when angered, spit like cats, and, like cats and dogs, drink by lapping with the tongue. They are extremely ferocious and unruly when taken mature, but are apparently very capable of being tamed if caught when young, though the natives of the plains or hills never attempt to subject to discipline their various and high natural endowments. Their cerebral development is much greater than that of the Mangooses, and they have a finer sense of smell but less acute hearing and diurnal vision. When fighting, they grapple with each other like wrestlers, scratching and biting at the same time, but never quitting their hold on the body of the adversary. They are matchless climbers, and derive the extraordinary energy of their double grasp with both hands and feet, whether in scansion or in contests with each other and with their prey, from the high articulation and free lateral motion of their limbs, the great strength and firm insertion in the large humeri of their pectoral muscles, and from the sharpness and curvature of their very mobile sheathed nails, all points in which they differ remarkably from the Mangooses, and approximate through the Ailuri to the Bears and Cats. Their rapid action is by digital bounds of the feet, palmary of the hands; their walk, slow, wholly plantigrade, and deliberate, with the head and tail lowered, and the back arched.

" It is no more shy of inhabited and cultivated tracts than the common Mangoose, or *Herpestes griseus,* and its favourite resorts are old and abandoned mango groves. In holes of the decayed trunks of the trees, it seeks a place of refuge, making such its ordinary dormitory, as well as invariable breeding-place, and even procuring its food almost as much amongst the branches as in the grass which is suffered to grow up in these groves after their cultivation has been laid aside. However rapacious its ordinary habits—and those of few of the carnivora are more so,—it feeds freely upon the ripe mango in season, as well as upon other ripe fruits, but its more usual food consists of live birds and of the lesser mammals, the former of which it seizes upon the trees as well as upon the ground, with a more than feline dexterity. It readily kills and devours snakes as well as hares and their young, with mice and rats, but will not touch frogs or blattæ. One that I had alive, escaped from confinement, and as soon as the gray of twilight set in, it made its way into the poultry-yard, climbing a high wall, and killing one goose, two ducks, and seven fowls, in less than an hour!"

b. and *d.* Hyænina and Canina, *Gray, Cat. Mamm. Br. Mus. Syst. List. XIX.*

Genus Hyæna, *Brisson et al.*

Canis Spec., *Linn. et al.*

100. *HYÆNA STRIATA*, *Zimmerm., Geogr. Gesch. II. p.* 256.

Hyæna vulgaris, *Desmar., Mamm. p.* 215. *Sykes, Cat. Dukh. Mamm. p.* 8. *Bennett, Tower Menagerie, p.* 71, *with a figure. Elliot, Cat. Mamm. of Southern Mahratta Country, p.* 103.

Canis hyæna, *Linn. Syst. Nat. ed. XII., I. p.* 58, *et Gmel. I. p.* 71.

The Striped Hyæna.

Turrus, of the Mahrattas, *Sykes.*

Taras, Dukhani, Kirba and Kutt kirba, Canarese, *Elliot.*

Hab. Turkey, Persia, India, and the neighbouring countries in Asia. Barbary, Arabia, Egypt, and Nubia, in Africa.

A. Presented by Colonel Sykes.

The specimen presented to the Company's Museum was a native of Dukhun, where, Colonel Sykes informs us, " Hyænas are numerous. They are susceptible of the same domestication as a dog. A specimen given by me to the Zoological Society was allowed to run about my house at Poona. On board ship it was in the habit of gambolling like a dog. It allowed persons to put their hands into its mouth without attempting to bite ill-naturedly. It was fed on rice and clarified butter." —(Proceed. Zool. Soc. 1831, July 12.)

In the year 1833, Colonel Sykes contributed the following additional information on the habits of the Hyæna to the Zoological Society :— " After a lapse of two years, the specimen above mentioned had attained its full growth, and I am happy to be enabled to confirm the opinions I formerly advanced. . . . . . My visits to the Gardens have (of late) been rare, and at long intervals, nor have I ever carried it food. I anticipated, therefore, that it would outgrow its early associations, and that I should be to it as any other stranger, but it has always greeted me not only as an acquaintance, but as an old friend; and if I am to judge from its agitation and peculiar cries, the animal's recognition is that of affection.

" On Sunday last it was asleep in its cage when I approached. On

calling to it by its name, it looked up, distinguished me in the crowd, started on its legs, and on my applying my hand to its mouth to smell to, it threw itself down against the bars, rubbed its head, neck, and back against my hand, and then started on its legs and bounded about its cage, uttering short cries. On ceasing to speak to it and moving away, it stopped and looked wistfully after me, nor resumed its motions until I addressed it again. Its manifestations of joy were so unequivocal as to excite the surprise of a great number of bystanders. As these pleasing traits in the disposition of a calumniated animal appeared so new to those who surrounded me on that occasion, they may possibly be deemed of sufficient interest to be worthy of extended promulgation by record in our Proceedings.

"I take occasion to repeat my conviction, that association with man, constant kindness, and abundance of food, will suffice not only to modify, and indeed eradicate, the worst traits in the disposition of any animal of the higher classes, but give birth to others of which their natures were not deemed susceptible."

Colonel Sykes's observations are confirmed both by Mr. E. T. Bennett and by Bishop Heber. "Notwithstanding the brutal voracity of the habits of the Hyæna, and the savage fierceness of his disposition, there is scarcely any animal that submits with greater facility to the control of man. In captivity, especially when taken young, a circumstance on which much depends in the domestication of all wild animals, he is capable of being rendered exceedingly tame, and even serviceable. In some parts of Southern Africa, the spotted species, which is by nature quite as ferocious in his temper as the striped inhabitant of the north, has been domiciliated in the houses of the peasantry, among whom he is preferred to the dog himself for attachment to his master, for general sagacity, and even, it is said, for his qualifications for the chase."—(Bennett, Tower Menagerie, pp. 75, 76.) Bishop Heber (Travels, I. p. 500) remarks: "Another instance fell under my knowledge of how much the poor Hyæna is wronged, when he is described as untameable. Mr. Traill (at Almorah) had one several years, which followed him about like a dog, and fawned on those with whom he was acquainted in almost the same manner."

Captain Hutton informs us that the Hyæna is common in Afghanistan.—(Rough Notes on the Zoology of Candahar, &c., Journ. As. Soc. Beng. XIV. p. 345.)

Genus CUON, *Hodgson, Calcutta Journ. Nat. Hist. II. p.* 205.*

CANIS, *Hodgson, Sykes, Gray, et al.*
CHRYSÆUS, *Ham. Smith.*

101. *CUON DUKHUNENSIS, Sykes, Sp.*

Canis dukhunensis, *Sykes, Catal. of Dukhun Mammalia, Proceed. Zool. Soc.* 1831, *p.* 100; 1832, *p.* 15.

Canis familiaris (wild variety), Canis dukhunensis, *Sykes. Elliot, Catal. of Mamm. of S. Mahratta Country, Madras Journ. Lit. and Sc. X. p.* 100.

Wild Dog of the Western Ghats, *Sykes, Trans. of the Roy. As. Soc. III. pp.* 405-10.

JUNGLI KUTTA, Dukhani, *Elliot.*

KOLSUN, of the Mahrattas, *Sykes.*

KOLLUSSNAH, KOLLUSRA, and KOLUSSA, *Captain A. Mackintosh, Account of the Mhadeo Kolies, Madras Journ. Lit. and Sc. V. p.* 81.

HAB. Dukhun, *Colonel Sykes.* Southern Mahratta Country, *Elliot.* Mysore, *Dr. F. (B.) Hamilton.*

A.

101*. *CUON PRIMÆVUS, Hodgson, Calc. Journ. Nat. Hist. II. pp.* 205, 412; *Journ. As. Soc. Beng. X. p.* 909; *XI. I. p.* 278.

Canis primævus, *Hodgson.*

Canis primævus, *Hodgson, Asiatic Researches, XVIII. ii. pp.* 221-236. *Proceed. Zool. Soc.* 1833, *p.* 111. *A. Delessert, Souv. d'un Voy. &c. II. p.* 16, *with a figure.*

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* Genus CUON.—General structure and dentition of *Canis*, but the molars only $\frac{6}{6}\frac{6}{6}$, the second tubercular behind the carnassier being deficient. Teats, as many as fourteen, or more than in any of the proper dogs; skull, by its uniform arcuation along the culmenal line, and by its shorter, stronger jaws, declining from the canine models, towards the feline. Parietes amply swollen, with moderate cristæ.

Odour and aspect of *Sacalius* (Smith) *Canis* (Linn.), but ears and tail usually larger, the brow and eye bolder, and the muzzle blunter. Shoulders and croup level. *Specific character*—Wild dog with double coat of wool and hair; large hairy-soled feet; large erect ears, and very bushy straight tail, reaching half way from the hough to the sole; deep rusty above, yellowish below and on insides of ears and of limbs and on lips.—*Hodgson.* (Calc. Journ. N. H. II. p. 209.)

Cuon primævus, *Gray, Cat. Mamm. Br. Mus. p.* 57. *Cat. Hodgson's Coll. p.* 10. *Zool. of the Voy. of H. M. Ship Samarang, p.* 16. *Cantor, Catal. of Malayan Mamm. p.* 26.

Chrysæus primævus, *Ham. Smith.*

Wild Dog, or Dhole, *Williamson, Oriental Field Sports, pp.* 30-35.

Buānsū, in Nepal, *Hodgson.*

Anjing Utan, of the Malays of the Peninsula of Malacca, *Cantor.*

? Quihoe, *Johnson's Indian Field Sports. Cited, by different writers,* Qyo, Quihoe, Quo, and Khoa.

Hab. The sub-Himalayan ranges, from the Sutlej in the west, to the Brahmaputr in the east, *Hodgson.* Bengal, *Williamson.* Malayan peninsula, *Cantor.*

A. Presented by N. Wallich, Esq., late Superintendent of the Botanic Garden, Calcutta.

Specimens of the two Wild Dogs from India here enumerated are as yet very rare in collections, and their title to a specific rank respectively requires further comparisons; they are nearly related to each other. Williamson briefly refers to the Dhole in the following remarks: "On the subject of the extreme shyness of this animal, and of its cunning in evading the eye of man, I should, perhaps, after more than twenty years' residence in Bengal, in which time I had traversed the country in almost every direction, have quitted India, and been inclined to dispute the existence of the Dhole, had I not been stationed two years in *Ramghur,* in the heart of the western frontier, and had ocular demonstration of its identity."

The following narrative combines the observations made on both species in different localities.

The *Cuon dukhunensis* appears to be indicated by Dr. F. (Buchanan) Hamilton in his "Travels in Mysore, Canara, and Malabar." In vol. I. p. 191, he states: "It is said that in the great forests round *Savana-durga,* there is a small animal called the *Shin-nai,* or Red Dog, which fastens itself by surprise on the neck of the tiger, and kills him. I have seen native drawings of the Shin-nai, which appear to represent an animal not yet described." 1807.

In *Dukhun,* Colonel Sykes found a wild dog, named *Kolson* by the Mahrattas,—the *Canis dukhunensis* of Colonel Sykes's ".Catalogue of

Mammalia observed in Dukhun" (Proceed. Zool. Soc. 1831, p. 100). "The Wild dog of Dukhun," Colonel Sykes remarks, "is essentially distinct from this *Canis sumatrensis* of Hardwicke. . . . . . These animals hunt in packs, and the specimen brought home was found to have the stomach distended with the remains of a Nylghau."

Captain A. Mackintosh, in his accounts of the tribe of Mahdeo Kolies, inhabiting the valleys on each side of the Syhadry range of mountains in Northern Dukhun, gives an interesting description of a wild dog belonging to this species, which is contained in the accompanying note.*—(Madras Journal of Lit. and Sc. V. p. 81.)

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* The animal, termed by us the wild dog, is known to the natives by the name of kollussnah, kollusra, and kollussa.(*a*) It is common in the Kotool district, and all along the range of Western Ghauts. It is about the size of a panther, with very powerful fore-quarters, narrow tapering loins, black and pointed muzzle, and small erect ears. The tail is long, and at the extremity there is a bunch of hair several inches in length. The kollussnah is of a darkish red colour, possesses great speed and hunts in packs of five, eight, and fifteen, and even to the number of twenty-five, is extremely active, artful, and cunning in mastering its prey. It is during the night-time they move about in search of food, but should an animal approach near them an hour or two after sunrise, or a short time before sunset, they will attack it; all animals seem instinctively to dread them. During the daytime they remain quiet in their hiding-places. When the kollussnah discovers an animal worthy of being captured, the circumstance is announced to the pack by a barking whistling noise; the others are on the alert, advance rapidly and post themselves slyly round the spot, and gradually close in on the animal. Upon seeing one or two of the kollussnahs, he gets frightened, but much more so when, running away at speed, he encounters one of his enemies in whichever direction he attempts to escape. The consequence is, that he stands quite amazed,—some of the kollussnahs run in close to him, and shed water on their bushy tails, which they swing about and jerk into his eyes; he is successively saluted in the same manner, when he approaches them or they run in upon him. The unlucky beast is soon blinded by the peculiar escharotic quality of the application, for he begins to stagger, and run round and round, and is now beset by all the kollussnahs, who make a loud barking and snapping noise, while they pull the animal down and tear him to pieces. When few in number, they have been known to gratify their hunger before the poor animal fell down or expired, each of them tearing away a mouthful while the animal remained standing. There are very few instances of their ever attacking the villagers' cattle, but they will kill stray calves if they fall in with them. The Kolies never molest the kollussnah, in fact they are glad to see them in their neighbourhood, being aware of the enmity that exists between them and the tiger, for they kill that animal occasionally, and in consequence they are considered by the people as the protectors of

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(*a*) *Note by Professor Wilson.*—These terms cannot be quite correct, as the essential part of the word is *Swun*, the Sanskrit and Mahratta word for 'dog;' *kol* or *kola*, possibly means 'wild.'

Walter Elliot, Esq., in his "Catalogue of Mammalia in the Southern Mahratta Country," informs us that "the wild dog was not known in the Southern Mahratta country until of late years. It has now become very common. The circumstance of their attacking in a body, and killing the tiger, is universally believed by the natives. Instances of their killing the wild boar, and of tigers leaving a jungle in which a pack of wild dogs had taken up their quarters, have come to my own knowledge; and on one occasion, a party of the officers of the 18th regiment M.N.I. saw a pack run into and kill a large sambur stag near Dharwar."

In the Malayan Peninsula the *Cuon primævus* was observed by Dr. Cantor, who obtained a pair from the interior of Malacca. In their habits and peculiarities they resembled those found in other parts of the continent of India.

On the history and peculiarities of the wild dog as it is found at the foot of the Himalayas, B. H. Hodgson, Esq., has given authentic and comprehensive details in a paper printed in the eighteenth volume of the "Asiatic Researches," pp. 221 to 237, which contains the result of his observations on the form, peculiarities, and habits of this animal.

Mr. Hodgson introduces his description by some general remarks on the primitive type of the Caninæ, in which he refers to M. Fred. Cuvier's arrangement of this group in the following terms: "By M. F. Cuv., whose arrangement of the Caninæ has been ratified by all the first Zoologists in Europe, the Dogs are disposed according to their approximation to the primitive type, so far as that type was discoverable in the wildest race known then to exist, and of which there were specimens accessible to him. The race in question is the *Dingo* of Australia. But as the *Dingo* is unquestionably at least half reclaimed, I presume that a careful account of an entirely wild species of Dog will be very acceptable to all who take an interest in the subject. And which of us but must regard with interest the portrait of the primitive Dog, either from affection for that devoted friend and follower of human kind, or from the light which the inquiry is calculated to throw upon the nature and limits of the distinction of species?"

"The Búánsú, or Wild Dog of the Nepalese, inhabits that part of these mountains which is equidistant from the snows and the plains, or, in other words, the middle region of Nepal. But he frequently

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their cattle and their fields, for neither sambur, deer, or hog seems disposed to approach places much frequented by the kollussnah. They hunt and kill the sambur, neelgaie, hyæna, deer, jackals, hares, hogs, bears, porcupines, and quails. They killed a tiger in June last year, in the Teloongun jungles.

wanders into the southern division, and sometimes into the northern. His limits, east and west, are, as I know, the Kali and Tista; and, as I am informed upon good authority, the Satlej and the Brahmapútr. Wild dogs, probably not materially differing from those of Nepal, are found, likewise, in the Vindhya, the Ghàts, the Nilgiris, the Kasya Hills, and finally in the chain extending brokenly from Mirzapur through South Behar and Orissa to the Coromandel Coast. The Búánsú is, in size, midway between the wolf and the jackal, being two and a half feet long from the tip of the nose to the insertion of the tail, and twenty-one inches in average height. It is a slouching, uncompact, long, lank animal, with all the marks of uncultivation about it,—best assimilated in its general aspect to the jackal, but with a something inexpressibly, but genuinely, canine in its physiognomy. It has a broad flat head and sharp visage, large erect ears, a chest not broad nor deep, a shallow compressed barrel somewhat strained at the loins, long heavy limbs, broad spreading feet, and a very bushy tail of moderate length, straight and carried low. Its colour is deep rusty red above, yellowish below. It stands rather lower before than behind, with the neck in the line of the body, the head unelevated, and the nose pointed almost directly forwards, the fore limbs straightened, the hind stooping, the back inclined to arch, especially over the croup, and the tail pendulous. In action the tail is slightly raised, but never so high as the horizontal line. Though the Búánsú be not deficient in speed or power of leaping, yet his motions all seem to be heavy, owing to their measured uniformity. He runs in a lobbing long canter, is unapt at the double, and, upon the whole, is somewhat less agile and speedy than the jackal, very much so than the fox. In general aspect, there can be no comparison instituted between the Búánsú and the fox, but one may illustrate him by such a comparison with the jackal. To a rather more full-opened eye, better placed in the head, and provided with something like a brow, the Búánsú chiefly owes his less sinister and more dog-like expression of countenance, the effect being aided by a rather better forehead, and less elongated and sharpened face. The wild dog's ears are twice as large as the jackal's, his limbs considerably longer, and his feet larger and more spread out, not to mention the great tufts of floccy hair, with which their soles are provided, and of which we find hardly a trace in the jackal's feet. The fur, or external covering of the Búánsú, consists of wavy wool, and straight harsh hair,—in summer, in nearly equal proportions, in winter, two parts of wool to one of hair. On the body in general, it is longish, smoothly directed backwards, and rather loosely applied to the skin, by

reason of the wool insinuating itself between the interstices of the hair, and ascending with it for two-thirds of its length. The hair generally has a four-fold annulation of colour,—from the base thus, whitish, black, deep rusty, black; the first ring being very small, the second and third, large and equal, the fourth, small. The visible effect of this distribution and proportion of the colours, aided by the reddish blue of the wool, is, that the animal appears to be of a full ferruginous red, the two basal rings being invisible, and the terminal one scarcely noticeable from its smallness,—not to mention that exists only on the dorsal surface, and not on the sides, nor of course below, where the colour of the animal is yellowish, and no rings are found. The tail towards its base is ringed with pale rusty and blackish; towards its tip the hairs are almost or wholly blackish.

"Of all the wild animals that I know of similar size and habits, the Búánsú, which is large, gregarious, and noisy in his huntings, is the most difficult to be met with. He tenants solely the deepest and most solitary forests of this woody and little-peopled region. The woods which cover the mountains environing the valley of Nepal Proper, afford shelter to numbers of jackals as of other wild animals, but the Búánsú never was known to enter them, or to approach so near to a populous district. This prototype of the most familiar of all quadrupeds with man is, in the perfectly wild state, the most shy of his society. I never beheld the Búánsú myself in the state of freedom, and therefore what I am about to say of his manners in that state must rest upon the authority of others—highly respectable natives, who spoke to what they personally knew.

"The wild dog preys by night and by day, but chiefly by day. Six, eight, or ten unite to hunt down their victim, maintaining the chase by their powers of smell rather than by the eye. They usually overcome their quarry by dint of force and perseverance, though they sometimes effect their object by mixing stratagem with direct violence. Their urine is peculiarly acrid; and they are said to sprinkle it over the low bushes amongst which their destined victim will probably move, and then in secret to watch the result. If the stratagem succeed, they rush out upon the devoted animal, whilst half-blinded by the urine, and destroy it before it has recovered that clearness of vision which could best have enabled it to flee or defend itself. This trick the Búánsú usually play off upon the animals whose speed or strength might otherwise fail them, such as the buffalo, wild and tame, and certain large deer and antelopes. Other animals they fairly hunt down, or furiously assail and kill by mere violence. In hunting they bark like hounds,

but their barking is in such a voice as no language can express. It is utterly unlike the fine voice of our cultivated breeds, and almost as unlike to the peculiar strains of the jackal and of the fox. The Búánsú does not burrow like the wolf and fox, but reposes and breeds in the recesses and natural cavities of rocks, in the manner of the jackal of Nepal. These peculiarities of domicile are probably in a great degree the consequences of the respective habitats of the animals in open plains or mountain fastnesses; and they doubtless change them when constrained to change their location. There is scarcely a wild animal, however large or formidable, which the wild dogs will not sometimes attack and destroy; and tame buffaloes and cows, when grazing in very solitary districts, sometimes fall a sacrifice to their ravenous appetite. Human beings they are never known to attack, and indeed they seem to be actuated by a very peculiar degree of dread of man. Those which I kept in confinement, when their den was approached, rushed into the remotest corner of it, huddled one upon another, with their heads concealed as much as possible. I never dared to lay hands on them, but if poked with a stick they would retreat from it as long as they could, and then crush themselves into a corner, growling low, and sometimes, but rarely, seizing the stick and biting it with vehemence. After ten months' confinement, they were as wild and shy as the first hour I got them. Their eyes emitted a strong light in the dark, and their bodies had the peculiar fœtid odour of the fox and jackal in all its rankness. They were very silent, never uttering an audible sound save when fed, at which time they would snarl in a subdued tone at each other, but never fight; nor did they on any occasion show any signs of quarrelsomeness or pugnacity."

For many valuable additional details respecting the form aud peculiarities of this animal, the account of Mr. Hodgson, in the eighteenth volume of the Asiatic Researches, may be consulted with advantage.

The history of the different species and varieties of the genus Canis, as dispersed through Continental Asia generally, has been illustrated by Colonel Ham. Smith in the Naturalist's Library, with admirable critical research and labour.

102. *CUON SUMATRENSIS*, *Hardwicke Sp.*

> Canis familiaris, var. sumatrensis, *Hardwicke, Trans. Linn. Soc. XIII. p.* 235, *with a figure, Raffles, Trans. Linn. Soc. XIII. p.* 249.
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> Cuon sumatrensis, *Gray, Zoology of the Voyage of H. M. Ship Samarang, p* 16.

Canis rutilans, *Müller, Over de Zoogdieren van den Ind. Archip. p.* 27 *and* 51.

Canis javanicus, *Desmar., Mamm. p.* 193.

Wild Dog of Sumatra, *Hardw., Trans. Linn. Soc. XIII. p.* 235. *Raffles, p.* 249.

WILDE HOND. In Java and Borneo, *Müller.*

Assoo (dog) ADJAKH, first variety.

Assoo KIKKEE, of the Javanese, OESOENG-ESANG, of the Sundaese, second variety.

HAB. Java and Sumatra; also Borneo, *Müller.*

A. Horsfield's Collection from Java.

The Wild Dog of the Indian Archipelago is so nearly allied to the Wild Dog of Continental India, the *Cuon primævus,* that it remains for further comparisons of specimens or individuals to determine whether it be a distinct species or merely a variety. Its form resembles that of the continental dog.

" The general colour is a foxy ferruginous red, varying to lighter shades on the belly and inside of the thighs; the tail is pendulous, bushy, reaching to the leg-joint, and covered with black hair."—(Hardw., Trans. Linn. Soc.)

In Java two varieties of the wild dog are found, the *Assoo adjak* and the *Assoo-kikkee,* or *Oesoeng-esang* of the natives. The former, Dr. Müller informs us, lives chiefly in pairs, and although a savage and untameable beast, is occasionally seen and captured. The latter is somewhat smaller in size and of a more cunning and evasive disposition. It congregates in packs of about fifteen, pursuing with excessive ferocity the *Cervus muntjak* and wild hogs, which are its principal food. During his long residence in the Archipelago, Dr. Müller could never obtain a single specimen, or even a fragment of its hide. Both varieties conceal themselves in the most inaccessible parts of large forests. My collections from Java contain a single individual scarcely adult, which was procured with difficulty in the extensive wilds of the eastern parts of Java.

Genus CANIS, *Linn et al.*

103. *CANIS AUREUS, Linn. Syst. Nat. XII., I. p.* 59; *ed. Gmel. I. p.* 72. *Desmar., Mamm. p.* 200. *Fischer, Synops. Mamm. p.* 184. *Sykes, Catal. of Dukhun Mammalia, Pr. Zool. Soc.* 1831, *p.* 101. *Elliot, Catal. of Mamm. of S. Mahratta Country, Madr. J. Lit. and Sc. p.* 101. *Bennett, Tower Menagerie, p.* 97, *with a figure.*

Canis aureus indicus, *Hodgson, Asiatic Researches, XVIII. p.* 232, *with a figure.*

Lupus aureus, *Kæmpfer.*

SRIGÁLA, Sanskrit.

Sjechaal persis, inde Anglis the Jackal, et Belgis der Jakhals, *Kæmpfer, Amœn. exoticæ,* 1712, *fas. II. p.* 412.

Schakall, *S. C. Gmelins Riese, III. p.* 80. *Penn., Quadr. I. p.* 261.

Jackal, *Shaw, Gen. Zool. I. p.* 304.

JACKHALS, of the Dutch, *Kolbe.*

KHOLAH, of the Mahrattas, *Sykes.*

KOLAH and SHIGHAL, Dukhani, *Elliot.*

NARI, Canarese, *Elliot.*

HAB. Southern Russia and Greece, in Europe. In Asia, Syria, Persia, and the entire of India westward of the Brahmaputar.

A. Presented by Colonel Sykes.

"The *Jackal* of Dukhun," Colonel Sykes informs us, "appears to be identical with the *Levantine* and *Persian Jackal.* They are numerous in Dukhun, and are terrible depredators in the vineyards. They are easily domesticated when taken young. I had a very large wild male and a domesticated female in my possession at the same time. The odour of the wild animal was almost unbearable; that of the domesticated jackal was scarcely perceptible."

Walter Elliot, Esq., states: "The native sportsmen universally believe that an old Jackal, which they call *bhalu,* is in constant attendance on the tiger, and whenever his cry is heard, which is peculiar and different from that of the Jackal generally, the vicinity of the tiger is confidently pronounced. I have heard the cry attributed to the *bhalu* frequently."—(Madras Journ. of Lit. and Sc. X. p. 102.)

The Jackal surpasses all animals of the canine family in the boldness and impudence of its depredations. It prowls at night in packs sometimes exceeding one hundred in number; it approaches persons during their sleep, and carries off boots, shoes, harness, and all articles made of leather. Kotzebue says, "its howl shakes the very soul; it is, besides, very bold, and sneaks during the night into the camp to steal the soldiers' boots. When very hungry, it enters churchyards, and digs up bodies recently buried."—(Travels in Persia, p. 62.) Captain Beechey compares the howl of the Jackal to a gigantic musical concert. "It must be confessed that it has something in it rather appalling

when heard for the first time at night; and as they usually come in packs, the first shriek which is uttered is always the signal for a general chorus. We hardly know a sound which partakes less of harmony than that which is at present in question; and indeed the sudden burst of the answering long protracted scream, succeeding immediately the opening note, is scarcely less impressive than the roll of a thunder-clap immediately after a flash of lightning."—(Travels on the Northern Coast of Africa, p. 492.)

The claim to the authority of the specific name *aureus*, probably belongs to the venerable Kæmpfer, whose account of the *Lupus aureus* was published in 1712. His early remarks on the habits of the Jackal are fully confirmed by the later writers here quoted. "Astuta, audax, et furacissima est, quam ex corporis figurâ non minus quam ex genio non incongrue lupi vulpem vocaveris: interdiu circa montes latet, noctu pervigil et vagus est, et catervatim prædatum excurrit in rura et pagos. . . . . . Ululatum noctu edunt execrabilem, ejaculatui humano non dissimilem, quem interdum vox latrantium quasi canum interstrepit; unique inclamanti omnes acclamant, quotquot vocem è longinquo audiunt."—(Amœn. exoticæ, 1712, fasc. II. p. 413.)

104. *CANIS LUPUS, Linn.*

Canis lupus, *Elliot, Madras Journ. Lit. and Sc. X. p.* 101. *Blyth, Journ. As. Soc. Beng. XI. p.* 596.
Canis pallipes, *Sykes, Proceed. Zool. Soc.* 1831, *p.* 101.
Landgah, or Indian Wolf, *Gray, Catal. Mamm. Br. Mus. p.* 58.
Landgah, Dukhani, *Elliot. Sykes.*
Bherija, Hindustani, *Shakespear.*
Tola, Canarese, *Elliot.*

Hab. Central and Southern regions of India.

A. A skin, not quite perfect. Presented by Colonel Sykes.

Walter Elliot, Esq., communicates the following information respecting the Indian Wolf.—(Madras Journ. Lit. and Sc. X. p. 101.)

"This species does not appear to differ from the common wolf. Three young ones which I had alive for some time agreed very much with the description of the *Canis pallipes* of Colonel Sykes, but several adults that I shot differed in their colours and general character. The head was large, the muzzle thicker, the colours in some cases more inclining to rufous, particularly on the fore legs, which in some cases were deep red, and the same colour was found on the muzzle from the eyes

to the nose. Others have more rufous on the hind legs, together with some black on the thighs, rump, and tip of the tail.

"The wolves of the Southern Mahratta country generally hunt in packs, and I have seen them in full chase after the goat antelope (*Gazella arabica*). They likewise steal round the herd of *Antilope cervicapra,* and conceal themselves on different sides till an opportunity offers of seizing one of them unawares, as they approach, whilst grazing, to one or other of their hidden assailants. On one occasion, three wolves were seen to chase a herd of gazelle across a ravine, in which two others were lying in wait. They succeeded in seizing a female gazelle, which was taken from them. They have frequently been seen to course and run down hares and foxes; and it is a common belief of the ryots that in the open plains, where there is no cover or concealment, they scrape a hole in the earth, in which one of the pack lies down and remains hid, while the others drive the herd of antelopes over him. Their chief prey, however, is sheep, and the shepherds say that part of the pack attack and keep the dogs in play, while others carry off their prey; and that, if pursued, they follow the same plan, part turning and checking the dogs, while the rest drag away the carcass, till they evade pursuit. Instances are not uncommon of their attacking man. In 1824, upwards of thirty children were devoured by wolves in the purgannah of Rone. Sometimes a large wolf is seen to seek his prey singly: these are called *won-tola,* and are reckoned particularly fierce.

"Length from muzzle to insertion of the tail, 36 to 37 inches; do. of the tail, 16 to 17½ inches."

Colonel Sykes informs us "that the wolves of Dukhun are numerous in the open stony plains, but are not met with in the woods of the Ghauts."

Mr. Hodgson states that "the common wolf is numerous in the plains, but he has never seen or heard of them in the Himalayas."—(J. A. S. B. XI. p. 596.)

105. *CANIS ANTHUS, Fr. Cuv., Mamm. lithogr. fasc.* 17.

Canis anthus, *Rüppell, Zool. Atl. p.* 44, *t.* 17. *Desmar., Mamm. p.* 201. *Fischer, Synops. Mamm. p.* 181. *Gray, Cat. Mamm. Br. Mus. p.* 59.

Dieb, Arab.

Hab. Nubia, *Rüppell.* Abyssinia, *Harris.* Senegal, *Fred. Cuv.*

A. From Sir W. C. Harris's Zoological Collection during his Mission to Abyssinia.

The *Canis anthus* represents the *Canis aureus* in certain parts of Northern Africa, but according to Rüppell it is rare. It is also found in Senegal. It is lighter in colour than the Jackal, inclining to gray, and with less of a reddish cast. The abdomen is whitish. The black spots on the back are more distinct than in the Jackal; the neck, near its union with the breast, is surrounded by a marked black collar. The ears are erect. The limbs are proportionally slender. Of the peculiar habits of this species, little is known. Rüppell states that the circumstances under which he obtained his specimens did not enable him to procure any satisfactory information on this head. His figure agrees with the specimens procured in Abyssinia by Sir W. C. Harris.

106. *CANIS FAMILIARIS*, *Linn.*

Canis familiaris, varietas indica.

Pariah Dog of Dukhun, *Sykes, Catal. Dukhun Mamm. p.* 6.

A. Presented by Colonel Sykes.

Colonel Sykes states that " none of the *domesticated* dogs of Dukhun are common to Europe. The Brinjaree Dog somewhat resembles the *Persian Greyhound* in possession of the Zoological Society, but is much more powerful. Pariah Dogs are very numerous; they are not individual property, and breed in towns and villages unmolested." Several varieties are enumerated by Colonel Sykes, of which one variety has been presented to the Company's Museum. Mr. Hodgson informs us, that " tame dogs abound in Tibet, and are much prized by the men for guarding the flocks and herds and houses, and by women for petting. For the former the Tibetan Mastiff is used; it is good-tempered, but dull and heavy, except in the night watch. The ladies' dogs are Poodles and Terriers, many of which are pretty, and have long soft hair. The Chinese at Lassa and Digurcha fatten the Poodles for the table."—(J. A. S. B. XI. p. 278.)

Genus Vulpes, *Ray*, *Brisson*, *Gray*, *Hodgson*, *et al.*

Canis Species, *Linn. et al.*

107. *VULPES BENGALENSIS*, *Shaw Sp.*

Vulpes bengalensis, *Gray, Cat. Mamm. Br. Mus. p.* 61. *Cat. Hodgs. Coll, p.* 11. *Hutton, Rough Notes on the Zoology of Candahar, Journ. As. Soc. Beng. XIV. p.* 345.

Canis bengalensis, *Shaw, Gen. Zool. I. p.* 330. *Fischer, Synops. Mamm. p.* 192. *Elliot, Catal. of Mamm. of S. Mahratta Country, Madras Journ. Lit. and Sc. p.* 102. *Gray and Hardw., Illust. Ind. Zool. II. pl.* 2.

Canis kokree, *Sykes, Catal. of Dukhun Mamm., Proceed. Zool. Soc.* 1831, *p.* 101.

Canis rufescens, *Gray and Hardw., Illust. Ind. Zool. II. pl.* 3. Variety,—The Doab Fox.

Vulpes corsac, v. bengalensis, indicus, et kokree, *Blyth, Journ. As. Soc. Beng. XI. p.* 597. *Ogilby, Zool. App. to Royle's Botany of the Himalayas.*

Vulpes indicus, *Hodgson, Classified Catal. of the Mammals of Nepal. Journ. As. Soc. Beng. XI. p.* 908. *Calcutta Journ. N. H. IV. p.* 286.

Kokree, of the Mahrattas, *Sykes. Elliot.*

Konk, Kemp-nari, and Chandak-nari, Canarese, *Elliot.*

Lomri and Nomri, Dukhani, *Elliot.*

Loomree, *Hutton.*

Bengal Dog, *Pennant, Quadr. I. p.* 260.

Bengal Fox, *Shaw, Gen. Zool. I. p.* 330.

Hab. The entire of India and the adjacent countries, *Blyth, Journ. As. Soc. Beng. XI. p.* 597.

A. Presented by Colonel Sykes.

B. Presented by B. H. Hodgson, Esq.

C. A skin in perfect state of preservation. From Griffiths's Collection.

D. A skin. From Colonel Sykes's Collection.

The Bengal Fox varies considerably both in size and colour in different localities. The general colour is grayish-brown with a fulvous cast, passing, in some cases, to isabella; it is always variegated above by the intermixture of whitish hairs. Colonel Sykes gives the following account of its peculiarities, as observed in Dukhun. "It is a very pretty animal, but much smaller than the European Fox. Head, short; muzzle, very sharp. Eyes, oblique; irides, nut-brown. Legs, very slender. Tail, trailing on the ground, very bushy. Along the back, and on the forehead, fawn-colour, with hair having a white ring near to its tip. Back, neck, between the eyes, along the sides, and half-way down the tail, reddish-gray, each hair banded black and reddish-white. All the legs, reddish outside, reddish-white inside. Chin and throat, dirty white. Along the belly, reddish-white. Ears, externally, dark brown, and with the fur so short as to be scarcely discoverable. Edges of eyelids, black. Muzzle red-brown. Length, twenty-two and twenty-two and a half inches; of the tail, eleven and a half to twelve inches."

Walter Elliot, Esq., communicates the following particulars: "Its

principal food is rats, land crabs, grasshoppers, beetles, &c. On one occasion a half-devoured mango was found in the stomach. It always burrows in open plains, runs with great speed, doubling like a hare; but, instead of stretching out at first like that animal, and trusting to its turns as a last resource, the fox turns more at first, and if it can fatigue the dogs, it then goes straight away."—(Madras Journ. of Lit. and Sc. X. p. 102.)

Capt. Hutton states, it "is common in Cutchee, where, previous to the advance of our army from Shikarpore, I have coursed them, with my friend Major Leech, late Political Agent at Candahar."—(J. A. S. B. XIV. p. 345.)

Mr. J. E. Gray (Catal. of Hodgson's Collection) enumerates the *Canis corsac* of Linnæus and the *Vulpes ferrilatus* of Hodgson as synonyms of the *Vulpes bengalensis*.

108. *VULPES FLAVESCENS, Gray, Ann. Nat. Hist. XI. p.* 118.

Vulpes flavescens, *Gray, Catal. Mamm. Br. Mus. p.* 60. *Catal. Hodgs. Collect. p.* 11. *Capt. Thomas Hutton, Rough Notes of the Zoology of Candahar, &c., Journ. As. Soc. Beng. XIV. p.* 344.

Vulpes montanus, *Hodgson* (*not Pearson*), *Journ. As. Soc. Beng. XI. p.* 278.

Robur, in Candahar, *Hutton.*

Hab. Afghanistan and Candahar, *Hutton.* Persia, *Gray.* Tibet and Lassa, *Hodgson* (J. A. S. B. XI. p. 278), where it is common.

A. Griffiths's Collection from Afghanistan.

Mr. J. E. Gray has given the first description of this species in the " Journal and Magazine of Nat. Hist." XI. p. 118. "Tail, yellowish; back, rather darker (inclining to brown); face, and outer side of fore legs, and base of the tail, pale fulvous; spot on the side of the face, just before the eyes, the chin (breast), the front of the fore legs, a round spot on the upper part of the hind foot, and the tips of the hairs of the tail, blackish; the ears, externally, black; end of tail, white."

Captain Thomas Hutton informs us, that "the species is numerous in the valleys around Candahar, hiding in burrows and holes in the rocks. The skins are soft, and made into *reemchahs* and *poshteens*. One specimen measured from nose to insertion of the tail, two feet; tail, seventeen inches; height at the shoulder, fourteen inches. Another

specimen: length to insertion of tail, two feet; tail, seventeen inches and a half; height, nearly fifteen inches at the shoulder.

109. *VULPES MONTANUS*, *Pearson Sp.*

Canis vulpes montana, or Hill Fox, *Pearson, Bengal Sporting Magazine, IV. p.* 126, 1836. *Journ. As. Soc. Beng. V. p.* 313. (*From the Beng. Sport. Mag.*) *VI. p.* 934. *Capt. Hutton's Trip to Burinda Pass in* 1836.

Vulpes montanus, *Gray, Catal. Hodgs. Collect. p.* 12. *Blyth, Journ. As. Soc. Beng. XI. p.* 589.

Canis himalaicus, *Ogilby, Proceed. Zool. Soc.* 1836, *p.* 103. *Zool. App. to Royle's Botany of the Himalayas.*

Vulpes nipalensis, *Gray, Mag. Nat. Hist. I. p.* 578, *New Series.*

Hill Fox, *Royle, Journ. As. Soc. Beng. I. p.* 99.

Hab. Nepal, in the central and northern hilly regions; also Tibet, *Hodgson.*

A. A skin. Presented by the Asiatic Society of Bengal.

This species has been carefully described by Dr. Pearson, Mr. Ogilby, and Mr. Blyth, in the works here referred to. Its exterior varies slightly in different localities. Mr. Blyth's description of one of the varieties agrees generally with the specimen contained in the Company's Museum, some parts of which are imperfect. "Fur, exceedingly rich, dense, and fine, the longer sort measuring fully two inches upon the back, and the inner everywhere of considerable length and woolly character. General colour, pale fulvous; scarcely more than fulvous-white over the shoulder-blades, and but little deeper on the sides, the haunches, and tail appearing grayish, while the middle of the back is much deeper and more rufous-fulvous than the rest, widening on the croup, and passing into the grayish appearance of the haunches; outside of the ears, deep (velvety) black to near the base...... Head, light fulvous, mixed with white, and marked as in other foxes; the darkish streak from the eye to the mustachial bristles faint, the latter black, and cheeks and jowl white as usual. Limbs, about the same pale fulvous as the head, the ordinary mark on the front of the fore-limbs inconspicuous, though indicated by grizzled black and white-tipped hairs; tail, bushy and white-tipped."—(J. A. S. B. XI. 589.)

Captain Hutton informs us, that "during the winter, especially when the snow is on the ground, these animals are very numerous about *Simla*, and come close to the houses in search of offal and other prey,

They breed in the end of March or early in April, and have three or four cubs at a birth; they are not confined to the lower hills, but range up to the verge of the snow."—(J. A. S. B. VI. p. 934.)

Dr. Pearson, in his description of the Hill Fox, regrets that nothing is known of the habits and manners of this animal.

B. NECROPHAGA, *Gray, Cat. Mamm. Br. Mus. Syst. List, XX.*

c. Viverrina.

(Continued from p. 54.)

Genus HERPESTES, *Illiger et al.*

MANGUSTA, *Olivier et al.*
ICHNEUMON, *Geoffroy et al.*
VIVERRÆ et MUSTELÆ, Spec., *Linn. et al.*

110. *HERPESTES JAVANICUS, Geoffr*, *Sp.*

Ichneumon javanicus, *Geoff., in Hist. nat. d'Egypte, II. p.* 137.

Herpestes javanicus, *Desmar., Mamm. p.* 212. *Müller, Over de Zoogd. van den Ind. Archip. p.* 28. *Gray, Cat. Mamm. Br. Mus. p.* 51. *Zoology of H. M. S. Samarang, p.* 14. *Cantor, Catal. of Malayan Mamm. p.* 33.

Mangusta javanica, *Horsfield, Zool. Research., with a figure. Fischer, Synops. Mamm. p.* 164.

Serpenticida seu Moncus, *Rumphii Herbar. Amboin. auct. p.* 69, *t.* 28, *f.* 2, 3.

Mangouste de Java, *Fred. Cuv., Mam. lithogr.* 25me *livraison.*

GARANGAN, of the Javanese.

HAB. Java and Sumatra, *Horsfield, Müller.* Penang and the Malayan Peninsula, *Cantor.*

A. Horsfield's Collection from Java.

The Javanese Herpestes is chiefly distinguished from the other Indian species by its darker colour. A ground of saturated chestnut, passing with obscure undulations into a deeper tint, is variegated uniformly with very numerous short longitudinal lines of a yellowish tawny colour. This appearance, which is characteristic of all Herpestes, is produced by alternate bands of tawny and brown, of different shades on the separate hairs. This tint is uniform on the whole surface, ex-

cepting the upper parts of the head, the forehead, the muzzle, and the feet, which are dark chestnut-brown, with obscure tawny variegations.

In general structure and proportion of limbs and tail, it agrees with the other species of this genus; it is also provided with an extensive pouch near the root of the tail, formed by the common integuments being greatly distended, and disposed in folds near the anal aperture.

In its habits and manners, the *Herpestes javanicus* resembles generally the other species of this genus. In the "Zoological Researches in Java," the following details are given: "The Garangan is very expert in burrowing in the ground, which process it employs ingeniously in pursuit of rats. It possesses great natural sagacity, and from the peculiarities of its character, it willingly seeks the protection of man. It is readily tamed, and in a domestic state it is docile, and attached to its master, whom it follows like a dog. It is fond of caresses, and frequently places itself erect on its hind legs, regarding everything that passes with great attention. It is of a very restless disposition, and always carries its food to the most retired place in which it is kept to consume it. It is very cleanly in its habits. It is exclusively carnivorous and very destructive to poultry, employing great artifice in the surprising of chickens. For this reason it is rarely found in a domestic state among the natives, as one of their principal articles of food is the common fowl, and great quantities are reared in all the villages. The Javanese also, like Mohammedans in general, have a great partiality for cats, and they are unwilling, in most cases, to be deprived of their society, for the purpose of introducing the Garangan."

This animal, in Java, is chiefly found in large teak forests, at no great elevation above the sea. Its agility is greatly admired by the natives. It attacks and kills serpents with excessive boldness. Dr. S. Müller, in his remarks on the Mammalia of the Indian Archipelago, confirms these statements, and especially notices the courage with which, notwithstanding the smallness of its size, it defends itself against every enemy, and the blind ardour with which it pursues its prey or attacks fowls and ducks during the day, notwithstanding the approach of dogs, or the presence of man.—(Over de Zoogdieren van den Indischen Archipel. p. 28.)

The venerable Rumphius, in the appendix to his "Herbarium Amboinense," gives a full account of this animal, under the name of *Serpenticida*. He especially describes its antipathy to serpents, and states that, from this propensity, the nobles of Java occasionally amuse them-

selves with exhibitions of the combats of the two enemies.* He asserts, confidently, that the animal, if wounded by a serpent, instinctively seeks an antidote in the *Ophioxylon serpentinum*, which grows plentifully in the teak forests of Java. It is observable that the same notion prevails on the continent of India with regard to the next species, the *Herpestes griseus*.

111. *HERPESTES GRISEUS*, *Geoffry*, *Sp*.

Ichneumon griseus, *Geoffr.*, *Nat. Hist. d'Egypte*, *p.* 137. *Bennett, Tower Menagerie*, *p.* 105.

Herpestes griseus, *Desmar.*, *Mamm. p.* 212. *Gray, Cat. Mamm. Br. Mus. p.* 52. *Zoology of H. M. S. Samarang, Mamm. p.* 15. *Sykes, Catal. Dukhun Mamm. Pr. Zool. Soc.* 1831, *p.* 102. *Cantor, Catal. of Malayan Mamm. p.* 34. *Ogilby, Zool. App. to Royle's Bot. Illust. p. lxv.*

Mangusta mungos (et caffra?), *Elliot, Cat. Mamm. S. Mahratta Country, Madr. Journ. Lit. and Sc. X. p.* 102.

Mangusta grisea, *Fischer, Synops. Mamm. p.* 164.

Herpestes pallidus, *Schinz, Synops. Mamm. p.* 373.

Viverra mungo, *Linn. Syst. Nat., ed. Gmel. I. p.* 84.

Mangutia v. Viverra mungo, *Kæmpfer, Amœn. exoticæ, p.* 574; *with a figure, p.* 567.

MUNGI MUNGISA, Telugu.

Mangouste nems, *Buff., Hist. Nat. Suppl. III. p.* 174.

The Moongus or Gray Ichneumon.

HAB. Continental India, and adjacent countries.

A. Presented by Colonel Sykes. From Dukhun.

B. Griffiths's Collection from Afghanistan.

C. Continental India.

This species is chiefly distinguished from the former by its larger size, grayish colour, and proportionally greater length of tail. In its natural state, it is equally bold and sanguinary, and Mr. Bennett

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* "Maxima virtus et officium quod hominibus præstat, est, quod serpentes occidat, quem in finem Magnates Javani eum maxime educant, et pro quivis octo vel decem nummos imperiales solvunt, ut aliquando ludibrium hujus pugnæ videant, quæ sequenti fit modo. Bini hostes sibi mutuo quum obvii sint, primo tentat anguis more suo Mustelam circumvolvere et enecare. Moncus hoc sibi permittit, sed sese adeo inflat, ut turgeat, quumque serpens eum complectitur, suoque capite ad eum accedit, ut morsum ipsi adferat, tum Moncus corpus suum contrahit, ita ut elabatur, at serpentis collum arrodit, ejusque fauces jugulat."

informs us, that " even in captivity, they retain much of their native spirit, and so great is their activity and determination, that the individual now in the Tower actually on one occasion killed no fewer than a dozen full-grown rats, which were loosed to it in a room sixteen feet square, in less than a minute and a half. They are very easily tamed, become attached to those with whom they are familiar, and to the house in which they live, and will follow their master about almost like a dog."—(Tower Menagerie, p. 106.)

The peculiar antipathy of this animal to serpents, and the means it is said to employ to secure itself from the effects of the poison, if bitten, is noticed by various authors. Colonel Sykes states; " It is believed by the Mahratta people to have a natural antipathy to serpents, and in its contests with them to be able to neutralize the poison from the bite of the serpent, by eating the root of a plant called *Moongus-wail*, but no one has ever seen the plant. Probably they allude to the *Ophiorrhiza mungos*."

Kæmpfer observed this species in his travels through Asia, and gives the following account of its habits, and of the use it makes of the *Radix mungo* as an antidote:—" Est mustelæ huic is generis, ut serpentem naturali odio prosequatur et velut glirem catus evadat. Tradunt igitur si contingat morderi muncum, serpentis astutiâ roboreque victum, relicto hoste, pro alexipharmaco hanc radicem quærere, et esu ejus illico restitutum, certamen reintegrare. . . . Domi alita facile mansuescit: habui, quæ mecum dormivit et instar caniculi domestici, per urbem et campos me secuta est."—(Amœn. exotic. p. 574.)

The plant figured by Rumphius as *Radix mustelæ* appears to represent the *Ophioxylon serpentinum*, but it remains to be determined whether the *Radix mungo* of Kæmpfer be the same plant.

112. *HERPESTES NIPALENSIS, Gray.*

Herpestes nipalensis, *Gray, Mag. Nat. Hist. New Series, I. p.* 578. *Catal. Mamm. Br. Mus. p.* 52. *Catal. Hodgson's Collection, p.* 9. *Zoology of H. M. S. Samarang, p.* 15.

Herpestes (Mangusta) auropunctatus, *Hodgson, Journ. As. Soc. Beng. V. p.* 235. *Classified Catal. of Nepal Mamm., Journ. As. Soc. Beng. X. p.* 909. *Cantor, Catal. of Malayan Mamm. p.* 34. *McClelland, Proceed. Zool. Soc.* 1839, *p.* 150.

Herpestes griseus, *Hutton, Rough Notes on the Zoology of Candahar, Journ. As. Soc. Beng. XIV. p.* 346.

(?) Herpestes pallipes, *Blyth, Journ. As. Soc. Beng. XIV. p.* 346, *note.*

Herpestes Edwardsii, *Geoffr., Hist. Nat. d'Egypte, II. p.* 138. *Fischer, Synops. Mamm. p.* 165. *Blyth, Journ. As. Soc. Beng. XIV. p.* 346, *note* (?) *Ogilby, Zool. App. to Royle's Botany of the Himalayas.*

The Highland Nyula, *Gray, Catal. Mamm. Br. Mus. p.* 52.

MOOSH-KHOORMA, of the Afghans, *Hutton.*

The name Neeool, from the Sans. Nakula, is applied indiscriminately in different localities to this and the next species.

HAB. The hilly regions of Nepal, *Hodgson.* Assam, *McClelland.* Malayan Peninsula, *Cantor.*

A. Presented by B. H. Hodgson, Esq.

B. McClelland's Collection from Assam.

C. and D. Two skins. Griffiths's Collection from Afghanistan.

" This species is of a uniform olive-brown colour, more or less saturate in different individuals, freckled with golden yellow, an aspect resulting from the five-fold annulation of each hair, with black and aureous; cheeks more or less rusty; fur of the body short, soft, and adpressed. Tail shorter than the body. Length from snout to rump, ten or twelve inches; tail nine to ten inches and a half."—(Hodgson, J. A. S. B. VI. p. 236.) It agrees with the *Herpestes javanicus* in having no distinct anal pouch, but the folds of the skin near the root of the tail are subdilated, and furnished with some scattered glandular points below the surface.

113. *HERPESTES NYULA*, *Hodgson.*

Herpestes nyula, *Hodgson, Journ. As. Soc. Beng. V. p.* 236. *Gray, Cat. Mamm. Br. Mus. p.* 52. *Cat. Hodgs. Collect. p.* 8.

Herpestes nigula, *Hodgs., Classified Catal. of Nepal Mamm. Calc. Journ. Nat. Hist. IV. p.* 287.

NYUL, or NEEOOL, of the plains, *Hodgson, Journ. As. Soc. Beng. V. p.* 236.

HAB. The open Taraï, *Hodgson.*

A. Presented by B. H. Hodgson, Esq.

This species exceeds that last mentioned in size, measuring from snout to rump fifteen inches, tail, the same, or eighteen inches with the

terminal hair. It is clearly distinguished from the other Indian species by the character of the hair of the body and tail, which is long, harsh, bristly, not closely applied, but diffuse, and marked with numerous rings of alternate brown and yellow. The general colour of the body is varied with rich red brown and hoary yellow: the ears, face, and limbs, redder; the neck and body below, pure pale yellow. Both this and the last species affect the cultivated fields when the crops are standing, and the grass, after the crops are down. They live in burrows of their own making, and the structure of their extremities is fossorial, but not typically so; the nails being suited also to climbing trees, at which the animals are sufficiently expert."—(Hodgson, Journ. As. Soc. Beng. V. p. 236.)

Genus URVA, *Hodgson*, *Gray*, *et al.*

GULO, *Hodgson, Journ. As. Soc. Beng. V. p.* 238.

MESOBEMA, *Hodgson, Classified Catal. of Nepal Mamm., Journ. As. Soc. Beng. X. p.* 910. *Calc. J. N. H. IV. p.* 287.

114. *URVA CANCRIVORA*, *Hodgson, Journn. As. Soc. Beng. VI. p.* 561. *Gray, Catal. Mamm. Br. Mus. p.* 50. *Catal. Hodgs. Collect. p.* 8.

Mesobema (olim Urva) cancrivora, *Hodgs. Classif. Catal. of Nepal Mamm., Journ. As. Soc. Beng. X. p.* 910. *Calc. Journ. Nat. Hist. II. p.* 214; *IV. p.* 287.

Gulo urva, *Hodgson, Journ. As. Soc. Beng. V. p.* 238. *Calc. Journ. Nat. Hist. II. p.* 458, *with a figure.*

? Viverra ? fusca, *Gray and Hardw., Illust. Ind. Zool. I. pl.* 5.

URVA, of the Nepalese, *Hodgson.*

HAB. Central Northern regions, *Hodgson.* Afghanistan, *Griffith.* Arakan, *Blyth.*

A. Presented by General T. Hardwicke.

B. Presented by the Asiatic Society of Bengal.

C. W. Griffiths's Collection from Afghanistan.

D. A skin, not perfect. Presented by B. H. Hodgson, Esq.

E. An imperfect skin, with a reddish aspect. Locality unknown.

The first authentic account of this animal is communicated by B. H.

Hodgson, Esq., in the fifth volume of the Journal of the Asiatic Society of Bengal for the year 1836, although specimens were brought to England by General Thomas Hardwicke about the year 1824. In the sixth volume of the J. A. S. B. Mr. Hodgson gives, in 1837, the following brief generic character. " Teeth, as in the genus *Herpestes.* Structure and aspect mediate between *Herpestes* and *Gulo,* subvermiform and digitoplantigrade. Snout, elongated, sharpened, and mobile. Hands and feet, largish; with digits connected by large crescented membranes. Sole and palm, nude . . . . . . On either side of the root of the tail a round, hollow, smooth-lined gland, secreting an aqueous, fœtid humour, which the animal squirts out posteally with force."—Vol. VI. p. 561.

The specimens in the Company's Museum vary considerably in the character of the hairy covering. The general colour is jackal, or fulvous iron gray : the fur is of two sorts, the interior, next the skin, woolly ; the exterior long, straggling, and laxly set on; in some individuals triannulated, fulvous, black, and white, constituting a variegated coat, spotted white, black, and fulvous ; in others, a tawny tint predominates, and the coat is more uniform ; again, others are dark rusty brown, with a mixture of gray hairs. The limbs are in all individuals blackish brown, with different shades of intensity. The abdomen brown. A white stripe extends on either side of the neck, from the ear to the shoulder, varying in brightness of tint in different individuals. Terminal half of the tail rufous or rufous yellow.

In a fifth imperfect specimen, a rufous tint predominates, and the entire tail is reddish.

In a natural arrangement, this genus follows *Herpestes.*

The habits Mr. Hodgson describes as carnivorous and ranivorous : dwelling in burrows in the valleys of the lower and central hilly regions of Nepal.

Genus Arctictis, *Temminck, Monogr. I. Table Méthodique, XXI.* 1820.

Ictides, *Valanciennes.* 1825.
Paradoxuri, Spec., *Fr. Cuv. et al.*
Viverræ, Spec., *Raffles.*

115. *ARCTICTIS BINTURONG, Fischer, Synops. Mamm. p.* 157.

Arctictis binturong, *Temm., Monogr. II. p.* 308, *with a figure of the skeleton and skull. Cantor, Catal. of Malayan Mamm. p.* 22. *Gray, Catal. of Mamm. Br.*

Mus. p. 54. *Zoology of H. M. S. Samarang, p.* 15. *Schinz, Synops. Mamm. p.* 313.

Arctictis penicillatus, *Temm., Tydschrift. Müller, Over de Zoogd. van den Ind. Archip. p.* 32.

Ictides, *Fr. Cuv., Dents des Mammif. p.* 104, *pl.* 34, *bis.*

Ictides ater, *Fr. Cuv., Mammif. III., the male.*

Ictides albifrons, *Valanciennes, Ann. des Scien. Nat. IV. p.* 57, *pl.* 1, *the female.*

Paradoxurus albifrons, *Fr. Cuv., Mamm. du Mus. IX. p.* 41, *with a figure. Desmar., Mamm. Suppl. p.* 540, *the female.*

Viverra ? binturong, *Raffles, Trans. Linn. Soc. XIII. p.* 253.

BINTURONG, in Sumatra and Java.

UNTURUNG, of the Malays of the Peninsula, *Cantor.*

MYOUK, or Monkey Tiger, Burma, *Capt. McLeod.*

HAB. Malacca, *Farquhar.* Sumatra, *Raffles.* Java and Sumatra, *Temminck.* Malacca, Tenasserim, and Aracan, *Cantor* and *Capt. McLeod.* Assam, *M. Delanaugerede.* Nepal, *Blyth, Report, &c., Journ. As. S. B. X. p.* 918.

A. An adult male, from Finlayson's Collection during the Mission of J. Crawfurd, Esq., to Siam.

The Binturong constitutes a distinct genus in the system of Mammalia. In the general form of the skull it resembles the genus Meles, although the relative position and union of the separate bones are formed on the type of Paradoxurus. The skeleton is comparatively slender, and the number of caudal vertebræ is greater than in Paradoxurus. Several other particulars of the osseous structure are enumerated by M. Temminck (Monogr. II. p. 307).

The head is proportionately bulky ; the muzzle short, attenuated, and somewhat turned up at the nose ; the lips are armed with long stout bristles, whitish at the base, which, as they diverge, form a peculiar radiated circle round the face, giving the countenance a striking and remarkable aspect. The eyes are large, black, and prominent ; the ears short, rounded, edged with white, terminated by tufts of black hair. The body, long and heavy, low on the legs, and the general appearance and habit slow and crouching. The tail is nearly as long as the body, and partially prehensile. The hairy covering is long,

rough, straggling, diverging, and very copious. The feet, strictly plantigrade; the toes, five on each foot, provided with short, half retractile, compressed, and strongly curved claws.

Teeth: incisive, $\frac{6}{6}$; canine, $\frac{1}{1}$ - $\frac{1}{1}$; grinders, $\frac{6}{5}$ - $\frac{6}{5}$.

The canines, in both jaws, are stout: those in the upper jaw, very long, compressed at the base, with a longitudinal groove in the exterior face.

The genus Arctictis is arranged by Mr. Gray, in his "Systematic List of the Genera of Mammalia, Catal. Mamm. Br. Mus. XX.," among the *Necrophaga viverrina*, near Paradoxurus, which genus it resembles in its osseous structure; it deviates, however, from the type of viverrina in the more strictly plantigrade character of the feet, in the partially prehensile tail, and in other points of structure in which it approaches Ailurus and Cercoleptes of the Ursina. Its final situation, in a natural arrangement, depends on further comparisons and discoveries. One species only is at present clearly defined; the *Arctictes binturong* of Fischer, or the *Ictides ater* of Fred. Cuv.: the *Arctictis* (*Ictides*) *albifrons* of Valanc., according to M. Temminck, is the female binturong, and the *Ictides aureus* of Fred. Cuv. is, according to Mr. Blyth, Journ. As. Soc. Beng. X. 919, "a veritable Paradoxurus."

The specimen in the Company's Museum, which is an adult, measures from the nose to the root of the tail, two feet nine inches; the tail is two feet three inches long. The general colour throughout is of the deepest black, with the exception of a whitish border to the ears and a few brown hairs scattered on the head above, and the anterior face of the fore legs. The hairy covering generally is long, rigid, and diverging, giving the animal a rough appearance; the tail is monstrously thick at the base, tapering to a point, with bristly, straggling hairs, exceeding those of the body in length.

The Binturong is a nocturnal animal, living solitary and concealed in the most secluded forests and mountains. It is by no means common. M. Temminck states, "That the Dutch naturalists found it only about ten or twelve times in Java, and only once in Sumatra. The individuals were observed during the day on trees, slowly creeping along large branches, and aiding themselves in their progress by the prehensile tail. Their gait is very slow and lingering, with measured steps. If not in search of food during the day, they lie in a torpid state, between the forks of branches, the body rolled up as a ball, surrounded by the tail and covered with thick foliage. If suddenly surprised, Dr. Müller informs us, they were restless and anxious, more inclined to creep away than to save themselves with courage and energy." Their howl,

according to Dr. Cantor, is loud, resembling that of some of the Malayan Paradoxuri.

The Binturong is omnivorous: plants, fruit, raw meat, small quadrupeds, birds, and insects, constitute its principal food: sugar-cane is a most favourite article; and Dr. Müller states that in the forests of Java and Sumatra, which it seeks for its abode, the wild vegetable productions supply its principal nourishment. In its habits it appears to be more mild and retiring than the viverrine animals generally, showing less of a sanguinary disposition. Dr. Cantor states, that when taken young it is easily tamed; and the third volume of the Calcutta Journal of Natural History contains the following account of an individual brought to Calcutta from Goalpara: "The specimen is a young male. It is perfectly docile and tame, passing in and out of its cage and climbing up the arm when extended to it. Its movements are peculiarly gentle and graceful, often standing erect on the hind feet, and generally using the tail as a support, twining it round some adjoining object. Its manners are playful, like those of a bear, affecting to bite and use its claws. Its food consists of plantains, bread and milk, and raw meat. It has vertical pupils, and appears to sleep much during the day, becoming more lively at night."—(C. I. N. H. III. p. 410.)

The discovery of the Binturong is due to Major Farquhar, who obtained an individual at Malacca, and communicated an account of it, with a specimen and drawing, to the Asiatic Society. This account not having been made public, it became the privilege of Sir T. S. Raffles to give the first authentic description of the animal in his Catalogue of Sumatran and Malayan Mammalia, printed in the thirteenth volume of the Trans. of the Linn. Society, where he states (p. 253), "It may be interesting to give the following particulars as furnished to me by that gentleman (Major Farquhar), in whose possession I saw a living specimen in 1819." From the account here given the substance has been extracted above.

About this time M. Duvaucel noticed a living specimen in the menagerie of the Governor-General at Barackpore, near Calcutta, probably the individual presented by Major F.; of which he made a drawing and description for M. Cuvier, which was published in the forty-fourth fasc. of the Mammif. of F. Cuv. and Geoffr. M. Temminck gives a copious description of the Binturong in the second volume of his Monographs; it is also mentioned by Dr. Sal. Müller, in his work Over de Zoogd. van den Ind. Archip. p. 32. Brief notices are also given in the Journ. As. Soc. Calc. X. p. 917-8, by Mr. Blyth, and in the second and third volumes of the Calc. Journ. Nat. Hist. pp. 458 and 410 respectively.

Genus MARTES, *Cuv., Tabl. élém.* 1797.

MUSTELÆ, Spec., *Boddært, Shaw, Fischer, et al.*

116. *MARTES FLAVIGULA*, *Boddært, Sp.*

Martes flavigula, *Gray, Catal. Mamm. Br. Mus. p.* 64. *Catal. Hodgs. Collect. p.* 12. *Zoology of H. M. S. Samarang, p.* 17. *Hodgson, Journ. As. Soc. Beng. X. p.* 909 ; *XI. p.* 281.

Mustela flavigula, *Bodd., Elench. p.* 88. *Fischer, Synops. Mamm. p.* 218. *Bennett, Gard. and Menag. Zool. Soc. p.* 225, *with a figure. Müller, Over de Zoogd. van den Ind. Archip. p.* 30. *Schinz, Synops. Mamm. p.* 335. *Shore, Zool. Journ. V. p.* 271. *Cantor, Catal. Malayan Mamm. p.* 24.

Mustela Hardwickii, *Horsfield, Zool. Journ. IV. p.* 238.

Mustela leucotis, *Ham. Smith, in Griffith's A. K.*

Mustela quadricolor, *Shaw, gen. Zool. I.* 2, *p.* 429.

White-cheeked Weasel, *Penn., Quadr. II. p.* 52.

Marte à gorge dorée, *Desmar., Mamm. p.* 185, *No.* 4.

MULL-SAMPRAH, in the Nepal or Newar language, *Hardwicke.*

TOOTORALÆ, in Kumaun and Gurhwall.

KOSEAH and KOOSIAR, in Sirmoor, *Shore.*

ANGA PRAO, of the Malays, *Cantor.*

Der Kusiar, *Schinz.*

HAB. Nepal, *Hardwicke.* Nepal and Tibet, *Hodgson.* Kumaon, Gurhwall, and Sirmoor, *Shore.* Malayan Peninsula, *Cantor.* Java and Sumatra, *Müller.*

A. Presented by Major-General T. Hardwicke.

B. Presented by J. T. Pearson, Esq.

C. D. Two dried specimens, from Captain R. Strachey's Collection from Tibet and Kumaon.

Several skins from various localities.

The earliest account of this animal is given by Pennant in the first edition of his History of Quadrupeds, published in 1781. Pennant observed one in Brooke's Menagerie in the year 1774, and named it White-cheeked Weasel : the place whence the animal was obtained was not ascertained. In 1785 Boddært introduced it into his " Elenchus

Animalium" with the name of *Mustela flavigula,* probably adapted from Pennant's description : for this name Shaw substituted that of *Mustela quadricolor,* General Zoology, I. p. 2, p. 429. From this period the animal was passed over or considered as doubtful by zoologists until the year 1824, when Maj.-Gen. T. Hardwicke brought to England a skin which he presented to the Museum of the East-India Company. This was described in the fourth volume of the Zoological Journal by Horsfield, who, overlooking Pennant's original description, named it *Mustela Hardwickii.* Within late years the animal has been frequently brought to Europe, both living and dried.

A living specimen, presented by the Hon. Captain Shore to the Zoological Society, is described by E. J. Bennett, Esq., in the " Gardens and Menagerie" of the Society. Mr. B. gives a satisfactory account of the general history and external colouring, with the following remarks on its habits. " Our specimen," he states, " is extremely tame, good-tempered, playful, and familiar. It partakes in a slight degree of the unpleasant odour remarkable in some other animals of the family, and of which the Polecat affords the most notorious example."—(Gard. and Menag. p. 228.)

The Hon. Capt. Shore informs us that this animal is found in Kumaon, Gurhwall, and part of Sirmoor. " It chiefly frequents the warm valleys, but is also found on the higher ridges, where the climate is perhaps as warm as the middle of France. It lives in holes, or in trees, in climbing which it is excessively active. Its food is chiefly birds, rats, mice, hares, and even young fawns of the Kakur or Barking-deer. The specimen sent to the Zoological Society was brought to me in September, 1828, when it was about four months old. It had been caught when not many days old, and was so tame, that it was always kept loose about a well, sporting about the windlasses, posts, &c., and playing tricks with the people who came to draw water." General Hardwicke obtained his specimen from Nepal, and Capt. R. Strachey observed it in Kumaon at an elevation of 7,000 feet.

Dr. S. Müller notices as a remarkable fact, that in Sumatra, this animal inhabits low, marshy wilds, while in Java it is only very rarely met with on the tops of the highest mountains.

117. *MARTES GWATKINSII, Jardine, Sp., Nat. Libr. I. p.* 167.

Galidictis chrysogaster, *Jard., Nat. Libr.*

Gwatkins' galidictis, *Jardine, Naturalist's Library, I. p.*167.

HAB. Peninsula of India, *Elliot.* Mussoorie, in the Himalayas, *Reynolds Gwatkins, Esq.*

A. Presented by Colonel Sykes.

This is as yet a rare species, and two specimens only appear to be recorded in collections; one of these has been sent from Madras by Walter Elliot, Esq., to Colonel Sykes, who presented it to the Museum of the East-India Company; the other is described by the editor of the Naturalist's Library (Mammalia, vol. I.), from a specimen obtained at Mussorie, in the Himalayas, by Reynolds Gwatkins, Esq. In this work it is classed in the genus Galidictis of J. Geoffr., the type of which is Viverra fasciata (Gmelin, Linn. Syst. Nat. I. 92),—the *Chat sauvage à bandes noires*, Sonnerat, II. 2, p. 193. I have not adopted this determination, from the following reasons: Our specimen agrees in all points so closely with the Martes Flavigula, described in the last article, that at first sight it appears to the observer to be a mere variety of that species; the general contour of the body, the distribution of colours, the form of the head, and proportion of the tail, are the same; the dimension also agrees with that species, and the markings of the throat and breast are similar.

In both species the body is long and slender, being more robust and elevated at the rump, gradually tapering towards the shoulders; the neck slender; head conical, of moderate length, somewhat compressed above, abruptly terminated. The external markings, respectively, are the following:—

In the *Martes flavigula* the head, nose, and upper lip, the sides of the face, including the ears, the back of the neck, the hair and adjacent parts of the body and limbs, both within and without, are of a deep shining black; the chin and lower jaw are white; the throat and breast yellow; the depth of the tints varying in different individuals; the body is brownish, or of a sandy testaceous colour, varying in certain dispositions to the light.

In the *Martes Gwatkinsii* the general colour throughout is black; the depth of the colour, however, varies in different parts, being more intense on the head and extremities. On the body and abdomen a shade of deep chestnut-brown is perceptihle, and some of the hairs being of a greyish tint, these parts are slightly variegated in a certain aspect. The chin and lower jaw are pure white; the throat, breast, and anterior part of the abdomen are yellow, inclining to orange. On each side of the chin, between the gape and the ears, is a round black spot, nearly half an inch in diameter. In the figure contained in the Naturalist's

Library, the colour of the abdomen is yellowish orange ; this colour, in the specimen of the Company's Museum, although apparent at the union of the breast and abdomen, does not extend over the whole of the under parts : further comparisons are therefore required to illustrate the character of this rare species.

118. *MARTES ABIETUM*, *Ray*, *Syn. Quadr. p.* 200.

Mustela martes, *Linn. Syst. Nat.* 12, *I. p.* 67, *ed. Gmel. I. p.* 95. *Desmar., Mammal. p.* 181. *Fischer, Synops. Mamm. p.* 124. *Schinz, Syn. Mamm. I. p.* 335.

Viverra martes, *Shaw, Gen. Zool. I.* 2, *p.* 410.

Pine martin (marten), *Pennant, Quadr. II. p.* 41. *Shaw, Gen. Zool. I.* 2, *p.* 410. *Bell, History of British Quadrupeds, p.* 174, *with a figure. Bennett, Gard. and Menag. Zool. Soc. p.* 229. *Gray, Cat. Mamm. Br. Mus. p.* 63.

La Marte, *Buffon, Hist. Nat. VII. p.* 190.

HAB. Ladak and Upper Himalaya, *Captain R. Strachey.*

A. Presented by the Asiatic Society of Bengal.

B. C. D. Three skins from Captain R. Strachey's Collection in Tibet and Ladakh.

The specimens of this species contained in the Company's Museum resemble in form and external colouring the Pine Marten of northern Europe and Asia, while the animal in its habits and mode of life agrees with the Beech Marten. The colour of the body and head above is light yellowish gray, rather deeper in a line along the back; the hair brown ; the extremities blackish ; the chin, throat, and breast are pure white. The size, form of the head, and the relative proportions of the tail and extremities, are also those of the Pine Marten, which has been ascertained by a careful comparison at the British Museum. The inner fur is soft, woolly, and copious ; the outer, longer, yellowish, and darker towards the point. Our specimens combine the peculiarities of the Pine and Beech Martens respectively, and lead to the conclusion that both are mere varieties of one species.

The question of their individuality is ably discussed by Mr. Bell in his History of British Quadrupeds, and by Mr. Bennett in the Gardens and Menagerie of the Zoological Society of London. Systematic writers generally separate them ; but both the authors mentioned allow the difficulty of pointing out a clear specific distinction between the Pine and Beech Marten.

Capt. R. Strachey found this species both in Ladakh and on the Himalayas, at an elevation of 11,500 feet above the ocean, where it lives chiefly in the villages of the inhabitants.

Genus MUSTELA, *Linn.*, *Fischer*, *Gray*, *et al.*

VIVERRÆ, Species, *Shaw et al.*

PUTORII, Spec., *G. Cuv. et al.*

119. *MUSTELA* (*PUTORIUS*) *KATHIAH*, *Hodgson*, *Journ. As. Soc. Beng. IV. p.* 702.

Mustela kathiah (v. auriventer), *Hodgs.*, *Classif. Cat. of Nepal. Mamm.*, *Journ. As. Soc. Beng. X. p.* 909. *Calcutta Journ. Nat. Hist. IV. p.* 287. *Gray*, *Cat. Hodgs. Coll. p.* 13. *Cat. Mamm. Br. Mus. p.* 66. *Schinz*, *Synops. Mamm. p.* 341. *Ogilby*, *Zool. App. to Royle's Bot. Illust. p.* 65.

KATHIAH, Nyul, Nepal, *Hodgson.*

HAB. Kachar of the northern region, *Hodgson.* Bootan, *Major Pemberton.*

A. Pemberton's Collection from Bootan.

B. A skin. Presented by B. H. Hodgson, Esq.

B. H. Hodgson, Esq., who discovered this beautiful weasel during his residence at the court of Katmandu, gives a full account of it in the fourth volume of the J. A. S. B. p. 71. Its specific character is "deep rich brown above, golden yellow below, chin whitish. Tail, limbs, and ears concolorous with the body above. Tail cylindrico-tapered, and half the length of the animal. Snout to rump, 10 inches; tail (less hair) 5 inches."

"This beautiful little creature," Mr. H. continues, "is exceedingly prized by the Nepálese for its service in ridding houses of rats. It is easily tamed, and such is the dread of it common to all murine animals, that not one will approach a house wherein it is domiciled. Rats and mice seem to have an instinctive sense of its hostility to them, so much so, that, as soon as it is introduced into a house, they are observed to hurry away in all directions, being apprised, no doubt, of its presence by the peculiar odour it emits. Its ferocity and courage are made subservient to the amusement of the rich, who train it to attack large fowls, geese, and even goats and sheep. The latter, equally with the former, fall certain sacrifices to its agility and daringness. So soon as it is loosed, it rushes up the fowl's tail, or goat's leg, and seizes the great artery of the neck, nor ever quits its hold till the victim sinks under exhaustion from loss of blood.

" The Káthiah has the true vermiform structure of the typical musteline animals ; its head, neck, and body forming a continuous equable cylinder. Its action is purely digitigrade, and even the palms and soles of its extremities are clad in hair beyond the limits of the lines defining the digits, and the balls supporting them and the wrists."........." The fur is short, shining, and adpressed; that of the tail being a little longer. The tail itself is just half the length of the animal, and is slender, round, and tapering."........." A horribly offensive, yellowish gray fluid exudes from two openings placed at the root of the tail."

120. *MUSTELA HODGSONI, Gray.*

Mustela Hodgsoni, *Gray, Ann. and Mag. of Nat. Hist. XI.* 1843, *p.* 118. *Catal. Mamm. Br. Mus. p.* 66.

HAB. Himalaya, *Gray.* Afghanistan, *Griffith.*

A. Griffith's Collection from Afghanistan.

" Fur yellowish brown, rather paler beneath; upper part and side of the head much darker; face, lips, chin, and throat varied with white; tail elongate; rather more than half as long as the body and head, and bushy towards the extremity."—(Gray, Annals and Magazine of Nat. Hist. Vol. XI. p. 118.)

121. *MUSTELA HORSFIELDII, Gray.*

Mustela Horsfieldii, *Gray, Ann. and Mag. of Nat. Hist. XI.* 1843, *p.* 118. *Catal. Mamm. Br. Mus. p.* 67.

HAB. Bootan, *Major Pemberton.*

A. Pemberton's Collection from Bootan.

" Uniform dark blackish brown, very little paler beneath; middle of the front of the chin, and the lower lips white; whiskers black; tail slender, blackish at the tip, half as long as the body and head."—(Gray, Annals and Magazine of Nat. Hist. Vol. XI. p. 118.)

122. *MUSTELA (PUTORIUS) SUBHEMACHALANA, Hodgs. Jour. As. Soc. Beng. VI.* 2, *p.* 563.

Mustela subhemachalana, *Hodgs. Classif. Cat. of Nepal. Mamm., Journ. As. Soc. Beng. X.* 2, *p.* 909; *XI. p.* 280. *Calc. Journ. Nat. Hist. IV. p.* 287. *Gray, Cat. Mamm. Br. Mus. p.* 67. *Cat. Hodgs. Coll. p.* 13. *Schinz, Syn. Mamm. p.* 342.

HAB. Tibet and the Himalayas, *Hodgson.*

A. A skin, from B. H. Hodgson's Collection.

B. H. Hodgson, who discovered this animal in Nepal, gives the following description of it in the sixth volume of the Journal of the As. Soc. Beng. Part II. p. 563-4 :—" Eleven and half to twelve inches long from snout to base of tail; tail five and half inches or six and half, with the terminal hair; uniform bright brown, darker along the dorsal line; nose, upper lip, and forehead, with two inches of the end of the tail, black-brown; mere edge of upper lip, and whole lower jaw, hoary. A short longitudinal white stripe, occasionally, on the front of the neck, and some vague spots of the same laterally, the signs, I suspect, of immaturity. Feet frequently darker than the body, or dusky brown; whiskers dark. Fur close, glossy, and soft; of two sorts, or fine hair and soft wool: the latter, and the hair basally, of dusky hue, but the hair externally bright brown. Head, ears, and limbs more closely clad than the body; tail more laxly, and tapering to the point."

123. *MUSTELA ALPINA*, *Gebler*, *Sp.*

Putorius alpinus, *Gebler, Mém. de la Soc. Imp. de Moscow, VI. p.* 215.

Mustela alpina, *Fischer, Syn. Mamm. p.* 220. *Gray, Cat. Mamm. B. Mus. p.* 67. *Schinz, Syn. Mamm. p.* 341.

Mustela altaica, *Pallas, Zool. Ross. Asiat. I.* 98.

Putorius alpinus, *Griff. Anim. Kingd. V.* 340-2.

HAB. The Altai Mountains, *Gebler*, *Pallas*, Tibet, *Capt. Strachey*.

A. From Capt. Strachey's Collection.

General colour sulphureous; brownish above, yellowish underneath; chin white. Length of the head and body, nine, and of the tail, five inches.

124. *MUSTELA ERMINEA*, *Linn. Syst. Nat.* 12, *I. p.* 68, *ed. Gmel. I. p.* 98.

Mustela erminea, *Fischer, Syn. Mamm. p.* 222. *Desmar. Mamm. p.* 180. *Bell, British Quadrupeds, p.* 148. *Gray, Cat. Mamm. Br. Mus. p.* 65. *Cat. Hodgs. Collec. p.* 13. *Hodgson, Classif. Cat. of Nepal Mammalia, J. A. S. B. X.* 909. *Calc. Journ. Nat. Hist. IV. p.* 287. *Notice of Tibet, Mamm. J. A. S. B. XI. p.* 280; *VI. p.* 9, 564.

Viverra erminea, *Shaw, Gen. Zool. I. Part II. p.* 426.

Stoat and Ermine, *Pennant, Quadr. II. p.* 35. *Shaw, Gen. Zool. I. Part II. p.* 426. *Bell, Br. Quadr. p.* 148.

Hermine et Roselet, *Buff.*, *N. Hist. VII. p.* 240.

HAB. Nepal, Himalaya, and Tibet, *Hodgson.* Afghanistan, *Griffith.*

A. Griffith's Collection in Afghanistan.

Although the Ermine appears to be extensively distributed through the districts mentioned above, a single specimen only, contributed by Griffith's researches in Afghanistan, is contained in the Company's Museum. In exterior it greatly resembles the animal as it occurs in Northern Europe and Asia, although the colour of the fur is less clear and brilliant, the specimen not being quite adult. The skull of our specimen agrees in all particulars closely with the skulls from various localities contained in the British Museum.

Besides the species of Mustela here described, several others are found in Northern India; namely, *Mustela canigula*, Hodgson, described in Vol. XI. p. 279, Journ. As. Soc. Beng., and *Mustela sarmatica*, Pallas, Spicil. Zool. XIV. t. 4, f. 1, observed and collected in Candahar by Capt. Thos. Hutton, who gives various interesting details of its external appearance and habits in the fourteenth volume of the Journ. As. Soc. Beng. pp. 346 to 352.

Genus PUTORIUS, *G. Cuv.*, *Gray*, *Hodgson*, *et al.*
MUSTELÆ Species, *Linn. et al.*

125. *PUTORIUS TIBETANUS*, *Hodgson*, *Journ. As. Soc. Beng. XVIII. p. I. p.* 446.

? Mustela Eversmanni, *Lesson, Man. p.* 144. *Schinz, Syn. Mamm. I. p.* 339.

Mustela Putorius, *Linn.* *Fischer, Syn. Mamm. p.* 219.

Black-faced Polecat of Tibet, *Hodgs. l. c.*

HAB. Ladakh, *Captain Strachey.* Utsáng, near the northern boundary of Nepal, *Hodgson.*

A. Capt. Strachey's Collection in Ladakh.

The specimen of this animal, described by Mr. Hodgson in the eighteenth volume of the Journal of the Asiatic Society of Bengal, was obtained with other Tibetan quadrupeds at Utsáng beyond the northern boundary of Nepal: a second specimen was procured by Captain R. Strachey in Ladakh, north of Kumaon. These both agree in external character. Mr. Hodgson points out the near resemblance to the European Polecat, of which he considers it to be the Tibetan analogue.

From the description and figure of Mr. Hodgson, it appears that the character of the Tibetan animal consists in the marked separation of the light and dark parts of the external covering. He gives the following specific character. " Fur long; above and laterally sordid fulvous, deeply shaded on the back with black. Below, from throat backwards, with whole limbs and tail, black. Head pale, with a dark mark over the face. Snout to vent fourteen inches: head less three; tail six, with terminal hair seven. Palma one and three-quarters: planta two and three-eighths."—(J. A. S. B. XVIII. p. 448.) Mr. H. further gives a detailed account of the structural peculiarities of his specimen from Central Tibet, which apply strictly to our specimen; and the skulls of both agree in all points. Of the habits nothing is communicated. Further comparisons are required to confirm the distinctness of the animal, and its specific rank.

Genus HELICTIS, *Gray, Proceed. Zool. Soc.* 1831, *p.* 94. *Schinz et al.*

GULONIS *species, Horsfield, Hodgson, Desmar., et al.*

MYDAI Spec., *Fischer, Temminck, Müller, et al.*

126. *HELICTIS ORIENTALIS, Horsfield, Spec.*

Gulo Orientalis, *Horsfield, Zool. Research. Desmar., Mamm. Suppl. p.* 537.

Mydaus orientalis, *Müller, Over de Zoog. v. d. Ind. Archip. p.* 27.

Helictis orientalis, *Gray, Cat. Mamm. Br. Mus. Additional species, p.* 195.

Mydaus macrourus (Kuhl), *Fischer, Synops. Mamm. p.* 155. *Temminck, Tabl. méth. des Mammif. in Monogr. p. XX. gen. XV.* (*Genus Mydaus, F. Cuv.*, deux espèces, *M. Meliceps,* qui a servi de type, et *Gulo orientalis* de *M. Horsfield,* que je propose de nommer *Mydaus macrourus,* Kuhl.)

NYENTEK, of the Javanese, *Horsfield.*

BIEOEL, of the Sundanese, *Müller.*

HAB. Java, *Horsfield, Müller, Tafel der Zoogd. v. d. Ind. Archip. en hunner verspreidung.*

A. Horsfield's Collection from Java.

Mr. J. E. Gray, who established this genus (Proceed. Zool. Soc. 1831, p. 94),* observes, " This genus, which inhabits Eastern Asia, has the

* Dentes primores $\frac{6}{6}$: laniarii $\frac{1}{1}$ $\frac{1}{1}$: molares $\frac{5}{6}$ - $\frac{5}{6}$; carnivori $\frac{1}{1}$ - $\frac{1}{1}$, in maxilla superiori 3-lobati, cum processu interno sub centrali lato 2-acuminato: tuberculares

general appearance and colouring of Mydaus, combined with a dentition resembling that of Gulo or Mustela, but differing from both the latter genera in the large internal central lobe of the upper carnivorous tooth." This character was drawn from the *Hel. moschata*, Gray. An analogous structure of the upper carnivorous tooth, somewhat modified, exists in the Javanese species of Helictis, which is described in the article *Gulo orientalis*, Horsfield's Zool. Research. in Java, &c.

" The *Helictis orientalis* is somewhat smaller than the English Polecat. The form of its body, in comparison with the Gluttons, is rather slender : it is chiefly covered with fur consisting of long hairs closely arranged, silky at the base, of a brown colour, and somewhat glossy, with a slight tint of reddish brown ; in certain lights it appears diversified, grayish and tawny. This fur covers greatest part of the body and head, and the whole of the tail and extremities ; the colour of these parts is consequently brown, or reddish brown, with occasional shades of rufous and tawny : the sides of the head, the neck, the throat, breast, and a broad spot on the top of the head, which passes, gradually decreasing in breadth, to the middle of the back, are white, with an obscure tint of Isabella yellow, of different degrees of intensity : this colour also exists, less distinct, in a longitudinal band along the lowest part of the abdomen. From the posterior angle of the eye, a narrow dark brown band passes in a curve towards the throat, and returns again to the posterior part of the ear, where it unites to the lobe. On the forehead, between the eyes, is a transverse band, of a grayish hue, united to an obscure longitudinal streak, which extends along the summit of the head, from the region of the eyes to the crown. The borders of the upper jaw and of the ear are whitish. The head is rather small and compressed, and the face gradually tapers to an obtuse nose.

" The limbs, both anterior and posterior, are slender, and the feet agree in structure with those of the other animals belonging to the first tribe of the family of Carnivores ; the soles are naked, and formed for the plantigrade mode of walking. Each foot is provided with five claws, which are horny, transparent, compressed, curved, and larger on the fore than on the hind feet. They are regular in their dimensions ; those of the middle toe are longest ; they are somewhat shorter on the index and on the fourth toe, but equal one to the other ; on the thumb and small toe they are smallest. The thumb is placed somewhat behind the other toes. Although the claws have considerable resemblance to

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$\frac{1}{1}$ $\frac{1}{1}$ superiores mediocres transversi, inferiores exigui. Caput elongatum. Pedes breves ; plantæ ad calcaneum fere nudæ : digiti 5—5 ; ungues validæ, anteriores longæ compressæ. (fossoriæ H.). Cauda cylindrica mediocris.

those of Mydaus, and are formed for perforating the ground, they differ in being shorter, more compressed laterally, and more suddenly curved. The tail is nearly half the length of the body; it is somewhat bushy, and terminated by long bristly hairs."

In the Dutch Catalogues of Zoology this animal is arranged in the genus Mydaus: it is however more nearly allied to the genus Helictis, which Mr. Gray has more recently defined in the characters above detailed. Dr. S. Müller also confirms the propriety of separating the two genera by stating the peculiarities of the habits of the *Helictis orientalis* as differing from Mydaus in a more strictly carnivorous character, in which it resembles Canis, Lutra, and Herpestes, living more exclusivley on small mammalia and birds. It does not diffuse that intolerably fetid exhalation which so remarkably characterizes the Mydaus; nor is it confined to an elevation of six to seven thousand feet above the level of the ocean, but also descends to the valleys and declivities of mountains.

"This animal is more solitary and circumscribed in its range than any other of the quadrupeds that have come under my observation in Java; I obtained but one specimen in the southern declivities of Mountain Prahu. It appears to be confined to the western part of the island."—(Horsf. Zool. Res. in Java.)

127. *HELICTIS NIPALENSIS*, *Hodgs. spec.*

Gulo nipalensis, *Hodgson*, *Journ. As. Soc. Beng. V.* 237. *VI. p.* 560.

Helictis nipalensis, *Hodgs.*, *Classif. Cat. of Nepal. Mamm. Journ. As. Soc. Beng. X. p.* 909. *Calc. Journ. Nat. Hist. IV. p.* 287. *Gray, Cat. Mamm. Br. Mus. p.* 69. *Cat. Hodgs. Coll. p.* 14. *Schinz, Syn. Mamm. I. p.* 328.

Gulo orientalis, *Hodgs.*, *Proceed. Zool. Soc.* 1834, *p.* 96.

Das Nepaulische Spitzfrett, *Schinz.*

HAB. Nepal, *Hodgson.*

A. A skin, presented by B. H. Hodgson, Esq.

B. H. Hodgson, Esq., who discovered this animal in Nepal, gives the following description of it in the fifth volume of the Journal of the Asiatic Society of Bengal, pp. 237-8: "Above, earthy brown: below, with the edge of the upper lip, the insides of the limbs, and terminal half of the tail, yellow; a white mesial stroke from the nape to the hips, and a white band across the forehead, spreading on the cheeks and

confluent with the pale colour of the animal's lower surface: head and body vermiformed; digits and nails of the anterior extremities stronger; half-way from the os calcis to the fingers, hairy; fur of two sorts, and abundant, but not lengthened nor harsh, nor annulated: tail, cylindrico-tapered, pointed, half the length of the animal; snout to rump, sixteen inches; tail seven and a half, or nine with the terminal hair.

"The form of this species is decidedly Musteline from the snout to the tail; and not merely the head, with its several external organs, but the skull also bears a close resemblance to those of Martes and Putorius. The anterior limbs, however, are decidedly fossorial, and the hinder suited for walking in a subplantigrade manner: both wholly unfitted for raptatory or scansorial purposes."

In the sixth volume of the Journal of the Asiatic Society, pp. 560-1, some further details of the external colouring of this species, from another specimen, are given by Mr. Hodgson.

Genus MYDAUS, *Fred. Cuv. et Geoffr., Mamm. fasc.* 27. *Fischer, Horsfield, et al.*

MEPHITIDIS Species, *Desmarest, Raffles, et al.*

128. *MYDAUS MELICEPS*, *Fr. Cuv. et Geoffr. l. c. Horsf., Zool. Research. in Java, with a figure. Desmar., Mamm. Suppl. p.* 537. *Schinz, Syn. Mamm. I. p.* 316. *Gray, Cat. Mamm. Br. Mus. p.* 69. *Zoology of H.M.S. Samarang, p.* 17. *Müller, Over de Zoogd. van den Ind. Archipel. p.* 26. *Vig. and Horsf., App. to Life of Sir T. S. Raffles, p.* 634.

Mephitis Javanensis, *Desmar., Mamm. p.* 187. *Raffl., Trans. Linn. Soc. XIII. p.* 251.

Mouffette de Java, *De Léschenault. G. Cuv., Ossem. foss. éd.* 4*me*, *VIII. pp.* 30 *and* 408.

TELEDOO, of the Eastern Javanese.

SENG-GUNG, or SIEGUNG, of the Sundanese.

TELAGO, of the Malays.

TELEGGO, or STINKARD, of the inhabitants of the interior of Sumatra.

HAB. Java and Sumatra, *Horsfield, Raffles, Müller.*

A. B. Horsfield's Collection from Java.

Mr. Marsden's mention of this animal in his History of Sumatra, p. 117, is perhaps the earliest notice of its existence, and the Sumatran

name of Teleggo affords a proof of its identity with the Javanese Teledoo. The first authentic scientific account is given by Mons. G. Cuvier, about the year 1812, in the fourth volume of the first edition of the Ossemens fossiles, from specimens brought to France by Mons. Léschenault de la Tour from Java, about the year 1803, and deposited in the Paris Museum. In the first edition of the Règne Animal, I. p. 151, published in 1817, the same author arranges it under the genus Mephitis, with the following remark: "Toutes celles qui viennent d'Amérique ont une queue longue et touffue; mais Mons. Léschenault en a dernièrement rapporté une de Java, qui n'a point de queue de tout."

The genus Mydaus was established some years later by Mons. Fr. Cuvier, and has been adopted, with a few exceptions, by zoologists: the details of the teeth are given in the author's Dents des Mammifères. In the year 1820, this animal was described in Horsfield's Zoological Researches in Java, from specimens contained in the Company's Museum, from which description the following is an extract: "The Tĕlĕdu has a peculiar external character and physiognomy. Although it generally agrees in size with the Polecats of Europe and America, the circumstances which influence its appearance are entirely different. The heavy form of the body, as well as the head gradually narrowed to an obtuse point, call to mind the figure of a hog. The shortness and strength of the neck, and the manner of walking, by placing the entire sole of the foot on the ground, contribute further to give to the animal a sluggish appearance. The eyes are placed high in the head, and in their size and disposition have considerable resemblance to those of a hog: the eyelids are rigid, and well provided with eyebrows consisting of minute bristles: the irides are of a dark colour, and the pupil is circular. The ears are nearly concealed by the hairy covering of the body; but these organs are provided externally with an oblong concha, which surrounds the posterior part, and passing the lower extremity of the meatus auditorius, forms a small curve inward. No whiskers are perceptible, but a few long straggling hairs arise from the upper lip. The covering of the Tĕlĕdu is adapted to the elevated and cold regions which it inhabits. The fur is composed of long delicate hairs, silky at the base, which are closely arranged, and afford a very warm coat to the body. On the sides of the neck the hairs are lengthened, and have a curved direction upward and backward; on the top of the head, meeting from before and behind, they form a small transverse crest, and on the abdomen they are thinly disposed, and afford in some parts a view of the naked skin. The colour of the hairs is blackish-brown, more or less intense on every part of the body, except the crown of the

head, a streak along the back, and the extremity of the tail. These parts are white, with a slight tint of yellow. The mark on the head has a rhomboidal form, obtuse and rounded anteriorly, but gradually attenuated as it passes to the shoulders, where it unites with the streak on the back: in some individuals this streak is interrupted. On the abdomen the brown is of a lighter hue, inclining to grayish or rufous. The covering is subject to several variations: some of the individuals deposited in the Company's Museum are grayish-brown, others are deep brown with a sooty tint; the last colour, as far as my observation extends, is the most common, and has formed the base of the specific character placed at the head of this article. The tail is scarcely half an inch long, but the hairs covering and surrounding it project above an inch from the body. The limbs are short and stout, and the feet agree in structure with those of the allied genera, being formed for the plantigrade manner of walking. The claws are united at the base by a thick membrane, which envelopes this part as a sheath. Those of the fore feet are nearly double the size of those of the hind feet. In place of the pouches and reservoirs of fetid fluids with which several genera of this family are provided, the Mydaus has two glands of an oblong form, about one inch long and half an inch wide, near the extremity of the rectum: they are placed opposite to each other, and are individually furnished with an excretory duct nearly half an inch long, which communicates with this intestine. In the middle of each duct is a very minute aperture, surrounded by a muscular ring, somewhat swelled, which enables the animal at pleasure to discharge or to retain the fetid fluid secreted by the glands. The ducts enter the rectum about half an inch within the external aperture. The internal surface of these glands is covered with numerous wrinkles disposed transversely. The fluid secreted by them is perfectly analogous, in its odour, to that secreted by several species of Mephitis in America, particularly to that of the *Mephitis striata* of Fischer. Having experienced that of the latter, which is known in most parts of North America by the name of Skunk, I readily recognised it in Java."

Here follow some remarks on the generic peculiarities of the Mydaus, on its affinity to other genera of this family, and on its situation in a natural arrangement of Mammalia; when the account proceeds: "The *Mydaus meliceps* presents a singular fact in its geographical distribution. It is confined exclusively to those mountains which have an elevation of more than 7,000 feet above the level of the ocean; on these it occurs with the same regularity as many plants. The long-extended surface of Java, abounding with conical points which exceed this elevation,

affords many places favourable for its resort. On ascending these mountains, the traveller seldom fails to meet with our animal, which, from its peculiarities, is universally known to the inhabitants of these elevated tracts; while to those of the plains, it is as strange as an animal from a foreign country. A traveller would inquire in vain for the Tĕlĕdu at Batavia, Samarang, or Surabaya. In my visits to the mountainous districts I uniformly met with it, and as far as the information of the natives can be relied on, it is found on all the mountains. It is, however, more abundant on those which, after reaching a certain elevation, consist of numerous connected horizontal ridges, than on those which terminate in a defined conical peak. Of the former description are the Mountain Prahu and the Tengger Hills, which are both distinctly indicated in Sir Stamford Raffles' map of Java; here I observed it in great abundance. It was less common on the Mountain Gĕde, south of Batavia; on the Mountain Ungarang, south of Samarang, and on the Mountain Ijen, at the farthest extremity; but I traced its range through the whole island.

Most of these mountains and ridges furnish tracts of considerable extent, fitted for the cultivation of wheat and other European grains. Certain extra-tropical fruits are likewise raised with success: peaches and strawberries grow in considerable abundance, and the common culinary vegetables of Europe are cultivated to great extent. To most Europeans and Chinese, a residence in these elevated regions is extremely desirable; and even the natives, who in general dislike its cold atmosphere, are attracted by the fertility of the soil, and find it an advantage to establish villages and to clear ground for culture. Potatoes, cabbages, and many other culinary vegetables are extensviely raised, as the entire supply of the plains in these articles depends on these elevated districts. Extensive plantations of wheat and other European grains, as well as tobacco, are here found, where rice, the universal product of the plains, refuses to grow. These grounds and plantations are laid out in the deep vegetable mould, where the Tĕlĕdu holds its range as the most ancient inhabitant of the soil. In its rambles in search of food, this animal frequently enters the plantations, and destroys the roots of young plants; in this manner it causes extensive injury, and on the Tengger Hills particularly, where these plantations are more extensive than in other elevated tracts, its visits are much dreaded by the inhabitants: it burrows in the earth with its nose in the same manner as hogs, and in traversing the hills, its nocturnal toils are observed in the morning in small ridges of mould recently turned up.

The Mydaus forms its dwelling at a slight depth beneath the surface,

in the black mould, with considerable ingenuity. Having selected a spot, defended above by the roots of a large tree, it constructs a cell or chamber, of a globular form, having a diameter of several feet, the sides of which it makes perfectly smooth and regular; this it provides with a subterraneous conduit or avenue, about six feet in length, the external entrance to which it conceals with twigs and dry leaves. During the day it remains concealed, like a badger in its hole; at night it proceeds in search of its food, which consists of insects and their larvæ, and of worms of every kind: it is particularly fond of the common lumbrici, or earth-worms, which abound in the fertile mould. These animals, agreeably to the information of the natives, live in pairs, and the female produces two or three young at a birth.

The motions of the Mydaus are slow, and it is easily taken by the natives, who by no means fear it. During my abode on the Mountain Prahu, I engaged them to procure me individuals for preparation; and as they received a desirable reward, they brought them to me daily in greater numbers than I could employ. Whenever the natives surprise them suddenly, they prepare them for food, the flesh is then scarcely impregnated with the offensive odour, and is described as very delicious. The animals are generally in excellent condition, as their food abounds in the fertile mould.

The Mydaus is not ferocious in its manners, and taken young, like the badger, it might easily be tamed. An individual which I kept some time in confinement, afforded me an opportunity of observing its disposition; it soon became gentle, and reconciled to its situation, and did not at any time emit the offensive fluid. I carried it with me from the Mountain Prahu to Blederan, a village on the declivity of that mountain, where the temperature was more moderate. While a drawing was made, the animal was tied to a small stake; it moved about quietly, burrowing in the ground with its snout and feet, as if in search of food, without taking notice of the bystanders, or making violent efforts to disengage itself; on earth-worms (lumbrici) being brought, it ate them voraciously; holding one extremity of a worm with its claws, its teeth were employed in tearing the other: having consumed about ten or twelve, it became drowsy, and making a small groove in the earth in which it placed its snout, it composed itself deliberately, and was soon sound asleep.

"Notwithstanding the intolerably offensive stench and exhalation of this animal, its flesh is considered savoury by the Sundaneese of Western Java, and Dr. S. Müller informs us that it is eaten by the natives after the removal of the glands which secrete the offensive fluid."

Genus ARCTONYX, *Fred. Cuv., Mamm. livr.* 51, 1825, *et al.*

MYDAI Spec., *Schinz.*

129. *ARCTONYX COLLARIS, Fred. Cuv. l. c.*

Arctonyx collaris, *Fischer, Syn. Mamm. p.* 152. *Gray, Cat. Mamm. Br. Mus.* 70. *Evans, Journ. As. Soc. Beng. VII. p.* 732, *with a figure.*

Mydaus collaris, *Gray and Hardw., Illust. Ind. Zool. I. Tab. VI. Schinz, Syn. Mamm. I. p.* 317.

Ursi Spec. *Duvaucel, Journ. As. Soc. Beng. VII. p.* 734.

BALOO-SOOR, Sand-pig, Hindustani.

Sand-bear, *Bewick, Quadr.*

HAB. Bengal, *Hardwicke.* Aracan, *Evans.*

A. Presented by Maj.-Gen. T. Hardwicke.

In its dental system the genus Arctonyx resembles the allied genera of this family, Gulo and Meles : on the seventh plate Vol. I. of Gray and Hardwicke's Illustrations of Indian Zoology, the skull and the peculiarities of the teeth are given. In the Company's specimen the incisors above and below, disposed reciprocally in a regular curve, are of moderate size, with somewhat blunt edges ; in the upper jaw vertical, in the lower jaw with an oblique inclination outwards. The canines are large, strong, and stout at the base. The grinders are compressed, four above and five beneath.

The first authentic account of this animal, since the description and figure of Bewick, from a specimen exhibited in the Tower of London, is given by M. Duvaucel in the seventh volume of the Journal of the Bengal Asiatic Society, p. 734. It was subsequently described and figured by MM. Fr. Cuvier and Geoffr., in the 51 Livr. of the Mammifères.

The specimen in the Company's Museum presents the following exterior : General habit that of the European Badger, but more robust. The hairy covering of the body rough, bristly, and straggling; that of the head shorter and more closely adpressed. The separate hairs are long, yellowish-gray at the base and blackish-brown at the tip, giving an irregularly undulated black and grayish surface. The head, generally with the throat and breast, is yellowish-white; on the upper part this colour forms a broad, regularly defined band from the snout to the occiput; ears of the same colour : the nape of the neck, a narrow band across the breast, the anterior portion of the abdomen, the extremities, a band arising from the middle of the upper lip, gradually wider

posteriorly, including the eyes and ears, another somewhat narrower arising from the lower lip, passing the cheek, uniting with the former on the neck, are deep blackish-brown. Tail short, attenuated towards the end, covered with rough hairs. Feet plantigrade; claws five on each of the extremities, strong, compressed, fossorial; that of the index of the fore foot greatly exceeding the others in size.

From the observations which M. Duvaucel made on an individual contained in the Menagerie at Barrackpore, he informs us that in its general habits it resembles the bears: it passes the greatest part of the day in profound somnolence, but becomes active at the approach of night: its gait is heavy, slow, and painful; it readily supports itself erect on its hind feet, and prefers vegetables to flesh. The specimen in the Company's Museum measures from snout to root of the tail two feet one inch: the tail seven inches; at the rump it is one foot high.

Genus LUTRA, *Ray Linn. Syst. Nat.* 1735.

MUSTELÆ Species, *Linn., Gmel., et al.*

130. *LUTRA NAIR, Fred. Cuv. in Dict. des Sc. Nat. XXVII. p.* 247.

Lutra Nair, *Fr. Cuv. l. cit. Sykes, Cat. of Dukhun Mamm. Pr. Zool. Soc.* 1831, *p.* 100. *Schinz, Syst. Mamm. I. p.* 354. *Hodgson, Journ. As. Soc. Beng. VIII. p.* 319; *X.* 903. *Calc. Journ. Nat. Hist. IV. p.* 287. *Blyth, Journ. As. Soc. Beng. XI. I. p.* 609. *Lesson, Manuel de Mammalog. p.* 156. *Cantor, Catal. Malay. Mamm. p.* 25.

JUL MARJAR, or Water-cat, of the Mahrattas, *Sykes.*
NIRNAI, Canarese (literally "Water-dog"), *Elliot.*
DATWAI BEKH, Canarese of the Wuddar tribe, *Elliot.*
PANIKUTTA, Dukhani (literally "Water-dog"), *Elliot.*
HUD, or HADA, Mahratta of the Ghats, *Elliot.*
ANJING-AYER, of the Malays of the Peninsula, *Cantor.*

HAB. Dukhun, *Sykes.* Pondichéry, *Lesson.* Nepal, *Hodgson.* Malayan peninsula, *Cantor.*

A. From Dukhun. Presented by Colonel Sykes.
B.

In the Catalogue of Mammalia observed in Dukhun, Colonel Sykes points out some differences between the specimens from Western India

and those which were brought to Paris by M. Léschenault de la Tour from Pondicherry; though these discrepancies do not justify its being separated as a species. In the Museum specimens the colour is pure brown, without the chestnut tint peculiar to the other Indian species; the throat, upper lip, and sides of the head are nearly white, and the line of separation between the upper and lower parts is not distinctly marked.

131. *LUTRA CHINENSIS*, *Gray, Mag. Nat. Hist.* 1836.

Lutra chinensis, *Gray, loc. cit. Cat. Mamm. Br. Mus. p.* 71. *Cat. Hodgs. Coll. p.* 14.
Lutra indica, *Gray, Mag. Nat. Hist.* 1836.
Lutra chinensis et indica, *Gray. Blyth, Journ. As. Soc. Beng. XVII. I. p.* 559.
Lutra tarayensis, *Hodgs. Journ. As. Soc. Beng. VIII. p.* 309; *X.* 909. *Calc. Journ. Nat. Hist. IV. p.* 287. *Schinz, Syn. Mamm. I. p.* 354.
Lutra vulgaris, *var. Hodgs. Journ. As. Soc. Beng. I. p.* 341.

HAB. China, *Reeves.* Madras, *W. Elliot, Esq.* Nepal, *Hodgson.*

A. Adult. B. Young. Presented by B. H. Hodgson, Esq.

In the Museum specimens the colour above is pale chestnut-brown with a yellowish isabella shade; beneath it is yellowish white, lighter on the throat and neck, where the line of separation between the upper and lower parts is more distinct than on the abdomen. In the adult specimen the fur is rather long and slightly diverging; in the young specimen it is very soft, closely adpressed, and slightly grizzled by the darker colour of the ends of the hairs.

In the eleventh volume, p. 99, of the Journal of the Asiatic Society of Bengal, Mr. Blyth gives some valuable remarks on the size, colour, and peculiarities of this species, showing its near resemblance to the European Otter.

132. *LUTRA SIMUNG*, *Raffles.*

Lutra Simung, *Raffles, Trans. Linn. Soc. XIII. p.* 234. *Müller, Over de Zoogd. van den Ind. Archip. pp.* 27 *and* 51. *Lesson, Manuel de Mammalog. p.* 156.

Schinz, Synops. Mamm. I. p. 350 (*exclus. Syn. H. Zool. Res.*).

Lutra Barang, *Fischer, Synops. Mamm. p.* 227.

Mustela Lutra, *Marsden, Hist. Sumat. Ed. tertia, p.* 115, *pl. XI. fig. No.* 1.

Anjing-ayer, *Marsden, Hist. of Sumatra.*

Simung, of the Malays in Sumatra, *Raffles*; and of the inhabitants of Sumatra and Borneo, *Müller*.

Hab. Sumatra, *Raffles.* Sumatra and Borneo, *Müller.*

A. Presented by Sir T. S. Raffles.

Mr. Marsden has given the earliest indication of this species in the first edition of his History of Sumatra, published in 1785, and the figure contained in the third edition conveys a correct idea of the habit of the animal. It has latterly been observed by most oriental zoologists, although it is rare in collections.

The body of the Simung is covered with a very soft fur, closely applied, the interior of which is woolly and of a yellowish-white colour; the exterior coat is of a darker tint, inclining to yellowish brown, deeper on the tail: the chin, throat, breast, and abdomen are of a lighter colour. The body of the animal is slender, and the tail proportionally long.

Dr. S. Müller pertinently directs the attention of zoologists to the confusion which exists in Fischer's Synopsis Mammalium, in the synonymy of this and the following species, caused by erroneously exchanging the native names of the respective species. Thus, No. 8 of genus Lutra, *L. Barang* of Fischer, is the *L. Simung* of Raffles, while No. 9, *L. Leptonyx*, named Simung by Fischer, is the *Barang-Barang* of Raffles and all other zoologists.

Genus Aonyx, *Lesson*, 1827. *Manuel, p.* 157.

Lutræ Species, *Fischer, Horsfield, et al.*

133. *AONYX LEPTONYX*, *Horsfield, Sp.*

Lutra leptonyx, *Horsfield, Zool. Research, with a figure. Müller, Over de Zoogd. van den Ind. Archip. pp.* 27 *and* 51. *Fischer, Synops. Mamm. p.* 227 (*exclus. nom. Indigen. Sumatr.*). *Gray, Cat. Mamm. Br. Mus. p.* 71.

Lutra Barang, *Schinz, Synops. Mamm. p.* 35. *Lesson, Manuel, p.* 156.

Aönyx Horsfieldii, *Gray, Mag. Nat. Hist.* 1836.

Lutra Barang et Aönyx leptonyx, *Cantor, Catal. Malay. Mamm. p.* 25.

Barang Barang, or Ambrang, of the natives of Sumatra, *Raffles* and *Müller.*

Anjing ayer, *Marsden Hist. of Sumatra.*

Wargul and Welingsang, of the Javanese, *Horsfield.*

Sero, of the Sundanese, *Müller.*

Dengen, of the Bedadju-Dayaks of Borneo, *Müller.*

Hab. Java, *Horsfield.* Sumatra, *Marsden, Raffles.* Java, Sumatra, Borneo, *Müller.*

A. Adult. B. C. Young. Horsfield's Collection from Java.

The genus Aönyx was established by Mons. R. P. Lesson in 1827, on the *Lutra inunguis*, G. Cuv. (or *Delalandi*), found at the Cape of Good Hope.—(See Manuel de Mammalogie, p. 157.)

In the form of the body and general exterior it agrees with the genus Lutra, but the structure of the feet and toes affords an essential character, separating it from the latter genus. In Aönyx the feet are palmated; the toes are united by a membrane, the third and fourth exceed the others in length, and are more closely united; they are cylindrical, with a slight horizontal compression, somewhat incrassated, blunt and rounded at the end; the claws are very minute, not projecting, but imbedded in the last phalanx. This description applies to the species from the continent of Asia and from the Indian Archipelago. Mr. E. Blyth, in comparing the cleaned skulls of the *Lutra Nair* and *L. leptonyx*, observed a difference indicating a peculiarity in the osteological structure respectively, which he details in the eleventh volume of the Journ. As. Soc. Beng. p. 603, and which deserves attention in determining the generic character of these two genera.

The hairy covering of the head and body of the *Aönyx leptonyx* is chestnut-brown, somewhat glossy, with a slight orange cast. The lips, sides of the head, chin, throat, and anterior portion of the breast, are yellowish white, the shade being deeper on the breast.

In its habits the Javanese Otter resembles the European species. In its adult state it is extremely ferocious; but, taken young, it may easily be domesticated. In general, the otters from the continent and islands of Asia agree in their manners and peculiarities. They live on fish, and are found near rivers and lakes. Dr. S. Müller informs us, that in the

western parts of Java he observed them, not only near the smooth-flowing rivers of the plains, but also in rapid mountain-streams, at an elevation of nearly 3,000 feet above the ocean. Dr. Cantor states that the various species of Lutra and Aönyx, which numerously inhabit the banks of the Malayan rivers, are at all times used by the Malays in river fishing. Mr. Marsden, on plate XI. No. 2, gives an excellent figure of the *Aönyx leptonyx,* with the simple name of Anjing ayer, in which the character of the toes, by which the genus is distinguished, is distinctly exhibited.

134. *AONYX INDIGITATUS*, *Hodgson, Spec.*

Lutra indigitata, *Hodgs., Journ. As. Soc. Beng. VIII. p.* 320 ; *X. p.* 909.

Aönyx indigitatus, *Hodgs. Calc. Journ. Nat. Hist. IV. p.* 287. *Gray, Cat. Hodgs. Coll. p.* 14. *Schinz, Synops. Mamm. I. p.* 355.

HAB. Nepal, *Hodgson.* Bootan, *Pemberton.* Afghanistan, *Griffith.*

A. From Major Pemberton's Collection in Bootan. Adult.

B. From Griffith's Collection in Afghanistan. Adult.

C. D. Presented by B. H. Hodgson, Esq. Young.

Size, somewhat larger than *A. leptonyx ;* general proportions the same ; tail, half the length of the body. Colour, pure chestnut-brown, without any orange shade. Fur smooth and close. Lips, sides of the head, chin, throat, and anterior breast, white, with a shade of yellowish-grey.

In the structure of the toes and claws, this species closely agrees with *A. leptonyx,* and strongly confirms the generic character.

Besides the species of Lutra and Aönyx above described, Mr. Hodgson enumerates two others from Nepál: *L. aurobrunnea,* Hodgs., and *L. monticola,* Hodgs.—(Journ. As. Soc. Beng. VIII. p. 320. Gray, Cat. Hodgs. Coll. p. 14. Hutton on the Zool. of Nepal, J. A. S. B. XIV. p. 351, note by Mr. Blyth.)

The late G. Finlayson, Esq., who accompanied the mission of J. Crawfurd, Esq. to Siam and Hüe, mentions in his zoological remarks, a species of Otter, the range of which extends from Zeylon to Siam, which resembles the European species : ? *Lutra Nair,* auctor.

Although the species of Lutra and Aönyx here enumerated, resemble

each other in the colour of their *pelage*, they have each a peculiar characteristic tint, which enables a careful observer to identify the individual species.

Genus MELLIVORA, *Storr, Prodr. Meth. An.* 1780. *Fred. Cuv., Gray, et al.*

URSI Species, *Blumenb., Hardw., et al.*
VIVERRÆ Species, *Linn. et al.*
GULONIS Species, *Desmar.*
RATELUS, *Bennett, Gard. and Menag. Zool. Soc.*
URSITAXUS, *Hodgson, As. Res. XIX. p.* 60.
RATEL, *Sparrm. in Kongl. Vetensk. Acad. Handl.* 1777.

135. *MELLIVORA RATEL*, *Storr.*

Mellivora ratel, *Gray, Cat. Mamm. Br. Mus. p.* 68. *Cat. Hodgs. Coll. p.* 13.
Mellivora capensis, *Fred. Cuv.* *Lesson, Manuel de Mammalog. p.* 143.
Ratelus mellivorus, *Bennett, Gard. and Menag. Zool. Soc. with a figure.*
Ratelus indicus, *Schinz, Synops. Mamm. I. p.* 329.
Viverra mellivora, *Linn. Syst. Nat. ed. Gmel. p.* 91.
Gulo capensis, *Desmar., Mamm. p.* 176. *Fischer, Synops. Mamm. p.* 156.
Ursus indicus, *Shaw, Gen. Zool. I.* 2, *p.* 470. *Hardwicke, Trans. Linn. Soc. IX. p.* 115, *with a figure.*
Ursitaxus inauritus, *Hodgson, Asiat. Research. XIX. p.* 60, *with details of the generic character.*
Ratel, *Sparrman, in Kongl. Vetensk. Acad. Handl.* 1777, *p.* 49.
The Ratel.
Indian Badger, *Shaw, Pennant, &c.*
BEEJOO KHOOSHKEE KANGAR, Hindustani.
BEEJOO, Hindi.
BEEYU KHAWAR, Telugu.

The Ratel, as found indigenous at the Cape of Good Hope and on the continent of India, has hitherto been considered by most zoologists as specifically identical. In both countries the upper surface of the body and of the head and tail are dull ash-grey, while the lower parts, separated by a regular boundary-line, are black. In the animal as

found at the Cape, there is a stripe of a lighter grey colour between the upper and lower parts, on which, combined with peculiarity of habits, and some difference in the colour of the upper surface, several zoologists have founded a specific distinction. Schinz (Synops. Mamm. p. 329) enumerates it as *Ratelus capensis*, der *Honig-Ratel*, and Mr. Burton (Proceed. Zool. Soc. Aug. 11, 1835, p. 113) gives a very minute account of a specimen of the Indian badger, from the Upper Provinces of Bengal, which he exhibited to the scientific meeting. He describes the anatomical structure and exterior covering, and illustrates the points in which it differs from the Cape Ratel.

In an account of a living specimen of the Ratel from Madras, contained in the Menagerie of the Zool. Soc. of London, Mr. E. T. Bennett enters fully into the history of this animal, from its first discovery at the Cape to a late period. He details the account which Sparrman received from the Cape Colonists, of its mellivorous habits in South Africa, with that which Gen. Hardwicke obtained on the continent of India, and in conclusion of a very valuable essay states the following: "As far as its manners have yet been developed, it appears to be, with regard to man at least, one of the most playful and good-tempered beasts, soliciting the attention of almost every visitor by throwing its clumsy body into a variety of antic postures, and, when noticed, tumbling head over heels with every symptom of delight. But towards animals it exhibits no such mildness of temper: and it is curious to observe the cat-like eagerness with which it watches the motions of any of the smaller among them that happen to pass before its den...... Its food is of a mixed nature, consisting, like that of the bears and other less carnivorous beasts, of bread and milk in the morning and flesh in the latter part of the day."—(Gardens and Menagerie of the Zool. Soc. &c., Quadrupeds, pp. 13 to 20.)

On the continent of India, General Hardwicke informs us, it is found on the high banks of the Ganges and Jumna, in the upper provinces. "It is rarely seen by day; but at night visits neighbouring towns and villages inhabited by Mahommedans, and scratches up the recently buried bodies of the dead, unless they are thickly covered by thorny bushes."

"When taken young, the Indian Badger is very manageable, docile, and playful. It is a bold animal; its hide remarkably thick, and its strength too much for most dogs of common size. Its general food is flesh in any state; but it is remarkably eager after birds; and crows, which were sometimes given to an individual which I had domesticated, were devoured with impatient avidity. Living rats seemed almost

equally acceptable; and it seldom lost the opportunity of springing upon common fowls, when they happened incautiously to be feeding within the length of its chain...... This species burrows with great facility...... It sleeps much by day; is watchful during the night; discovering inquietude by a hoarse call or bark, proceeding from the throat."—(Trans. Linn. Soc. IX. pp. 115-6.)

The genus Mellivora forms a natural transition to the second family of this order: the

URSIDÆ, *Gray, Cat. Mamm. Br. Mus. Syst. List. XXI.*

a. URSINA.

Genus HELARCTOS, *Horsfield, Zool. Journ. II. p.* 221.

URSI Species, *Horsfield, Fischer, et al.*

136. *HELARCTOS MALAYANUS*, *Horsf., Sp. Zool. Journ. II. p.* 234.

Helarctos malayanus, *Gray, Cat. Mamm. Br. Mus. p.* 73. *Zoology of H.M.S. Samarang, p.* 18. *Cantor, Catal. of Malayan Mamm. p.* 21.

Ursus Malayanus, *Raffles, Trans. Linn. Soc. XIII. p.* 254. *Horsfield, Zool. Research. in Java, with a figure. Fischer, Synops. Mamm. p.* 144. *Müller, Over de Zoogd. van den Ind. Archip. p.* 32. *Cuvier, Ossem. foss. éd.* 4me, *VII. p.* 197 *and* 218. *Fred. Cuv. et Geoffr. Mamm. fasc.* 47. *Lesson, Manuel Mamm. p.* 134. *Vigors and Horsfield, App. to Life of Sir T. S. Raffles, p.* 633.

BRUANG, of the Malays on Sumatra, *Marsden and Raffles.*

HAB. Sumatra, *Marsden* and *Raffles.* Sumatra, Borneo, and Malacca, *Müller.* Malayan Peninsula, *Cantor.*

A. Presented by Sir T. S. Raffles.

Mr. Marsden deserves the credit of having indicated the existence of the Malayan Bear with the name of BRUANG, in Sumatra, and of mentioning its habit of ascending the cocoa-nut trees to devour the tender part or cabbage.—(Hist. of Sumatra, second edition, 1784.)

The first systematic account, so far as I have been able to ascertain,

is given by Sir T. S. Raffles in the thirteenth volume of the Trans. Linn. Soc. p. 254. Here, after a few remarks on the exterior, the manners are thus described: " When taken young, they become very tame. One lived two years in my possession. He was brought up in the nursery with the children; and when admitted to my table, as was frequently the case, gave a proof of his taste by refusing to eat any fruit but mangosteens, or to drink any wine but champagne. The only time I ever knew him out of humour was on an occasion when no champagne was forthcoming. He was naturally of a playful and affectionate disposition, and it was never found necessary to chain or chastise him. It was usual for this bear, the cat, the dog, and a small blue mountain-bird or Lory, of New Holland, to mess together, and to eat out of the same dish. His favourite playfellow was the dog, whose teazing and worrying was always borne and returned with the utmost good-humour and playfulness. As he grew up, he became a very powerful animal; and in his rambles in the garden, he would lay hold of the largest plantains, the stems of which he could scarcely embrace, and tear them up by the roots."

The range of the Malayan Bear appears to be limited to within a few degrees of the equator. He is attracted, in Sumatra, to the villages of the natives by his fondness for the young protruding summits of the cocoa-nut trees. He is well known to be fond of delicacies. In his native forests his lengthened tongue fits him peculiarly for feeding on honey, which is abundantly supplied by various indigenous species of bees.—(Zool. Journ. ii. p. 232.)

This account is confirmed by Dr. Sal. Müller, who states: " In his native forests the Bear displays much zeal and ingenuity in discovering the nests of bees, and in extracting their contents, by means of his teeth, from the narrow orifices of the branches of the trees in which they are concealed; for nothing appears to be so attractive to his taste as honey." Dr. Müller also informs us that the Malayan Bear inhabits exclusively the large forests which cover as well the plains as the mountain declivities of Sumatra and Borneo: here he lives in hollow trees or caverns, avoiding the neighbourhood of villages or human dwellings. He remains concealed during the day: at night he visits the plantations, ascends the fruit-trees, and, being very eager after sweets, he steals into the sugar-plantations, in which he commits as much injury by devouring as by treading down the cane. In his pursuit of small birds and animals, he prefers those that live on a vegetable diet. It is only in cases of the greatest want that this Bear has been known to attack and devour man.

137. *HELARCTOS TIBETANUS, Cuv. et Geoffr., Sp.*

Ursus tibetanus, *Fr. Cuv. et Geoffr., Mamm. fasc.* 41. *Hodgs., Journ. As. Soc. Beng. I. p.* 340; *X. p.* 910. *Calc. Journ. Nat. Hist. IV. p.* 288. *Proceed. Zool. Soc.* 1834, *p.* 96. *Fischer, Synops. Mamm. p.* 145. *Blyth, Journ. As. Soc. Beng. XI. p.* 444.

Helarctos tibetanus, *Gray, Cat. Mamm. Br. Mus. p.* 73. *Cat. Hodgs. Collect. p.* 15.

Ursus torquatus, *Schinz, Syn. Mamm. p.* 302.

Ursus ferox, *Robinson, Account of Assam. Vide Gray, Cat. Hodgson's Collection.*

The Black Bear of the Himalaya, *Blyth.*

Der Kragen-Bær, *Schinz.*

HAB. Nepal, the northern hilly region, *Hodgson.*

A. Presented by B. H. Hodgson, Esq.

"This species was first noticed by M. Duvaucel in the mountains of Sylhet, and about the same time by Dr. Wallich in the Nepal range. The neck of the Thibet Bear is thick, and the head flattened, the forehead and muzzle forming almost a straight line; the ears are large, the body compact, and the limbs thick and clumsy; but the claws are comparatively weak. The general colour is black, but the lower lip is white, and a large Y-shaped mark of the same colour on the breast sends up its branch on each side in front of the shoulder. It is not of large stature. Fruits and other vegetable productions appear to constitute its principal food."—(History of Mammalia, Vol. I. p. 113, edited by Knight.)

Robinson informs us that "these Bears are numerous in Assam, and that in some places accidents caused by them are not unfrequent."—(Descriptive Account of Assam, &c. p. 96.)

Genus MELURSUS, *Meyer, Zool. Ann.* 1794.

URSUS, *De Blainv., Tiedeman, et al.*

PROCHILUS, *Illiger, Prodr. Syst. M. et Av.* 1811.

BRADYPUS, *Shaw and Pennant.*

CHONDRORHYNCHUS, *G. Fischer.*

138. *MELURSUS LYBICUS, Meyer, Zoologische Annalen. Gray, Cat. Mamm. Br. Mus. p.* 72.

Ursus labiatus, *De Blainv., Bullet. de la Soc. Philom. Desmar., Mamm. p.* 166. *G. Cuv., Ossem. foss. éd.* 4*me*, *p.* 189, *&c. Sykes, Catal. of Dukhun Mamm. Proceed. Zool. Soc. July,* 1831. *Schinz, Syn. Mamm. p.* 303.

Ursus longinostres, *Tiedeman.*

Prochilus ursinus, *Illiger.*

Bradypus ursinus, *Shaw, Gen. Zool. I. p.* 1, *p.* 139.

Bradypus ursiformis, *Shaw, Zool. Mid. I. t.* 58.

Ursiform Sloth, *Pennant, Quadr. II. p.* 243. *Shaw, Gen. Zool. I. p.* 1, *p.* 159.

Bhallu or Riksha, Sans., *Wilson.*

Reechh, Hind., *Hamilton.*

Bhaluk, Beng.

Eloogoo, Telugu.

Aswail, of the Mahrattas, *Sykes, Elliott.*

Kaddi, Karadi, Canarese, *Elliot.*

Rinch, Dukhani, *Elliot.*

Hab. Hindustan, Nepal, *Hodgson.* Dukhun, *Sykes.* Southern Mahratta Country, *Elliot.*

A. A drawing from Dr. Francis (Buchanan) Hamilton's Collection.

Pennant examined an individual of this species which was brought from Benares, in Upper India, in company with Shaw, in 1790: the specimen having lost its front teeth, they mistook its character, and according to the rigid rules of the artificial system then used, they arranged it in the genus Bradypus, while its general character indicated its affinity to the genus Ursus; it was accordingly named the Ursiform Sloth. By this name it has been known for many years.

Its habits and exterior are familiar to all who visit Museums and Menageries. It is very docile, and in India is trained by the jugglers to the performance of various feats for the amusement of spectators. In captivity it appears to be mild, but melancholy. A pair of them were kept for some time in the Gardens of the Zoological Society.

Colonel Sykes informs us that " an *Aswail* brought to him from the woods when quite young, which lived some time in his possession, fed by choice almost exclusively upon roast mutton and fowl." Mr. Elliot states " that their food, when at large, seems to be black ants, termites, beetles, fruit, particularly the seed of the *Cassia fistula*, of the date-tree,

&c., and honey. When pursued, they carry their cubs on their back. In 1833 a bear was chased and killed, having carried her cubs in this manner nearly three miles. It appears to be a long-lived animal. Instances are known of their living in a state of captivity for forty years."—(Madras Journ. X. p. 100.) In the seventh volume of the fourth edition of Cuvier's Ossem. Foss., that author gives full details of the osteological peculiarities of this species.

e. AILURINA, *Gray, Cat. Mamm. Br. Mus. Syst. List. XXI.*

Genus AILURUS, *Fr. Cuv., Hardwicke, et al.*

139. *AILURUS FULGENS, Fr. Cuv. et Geoffr., Mamm. lithogr. fasc.* 50.

Ailurus fulgens, *Hardw., Trans. Linn. Soc. XV. p.* 161, *with illustrations of the teeth and extremities (Note by Secretary). Gray, Cat. Mamm. Br. Mus. p.* 75. *Cat. Hodgs. Coll. p.* 15. *Fischer, Syn. Mamm. p.* 157. *Hodgson, Proceed. Zool. Soc.* 1834, 96. *Journ. As. Soc. Beng. I.* 340; *X.* 909. *Calc. Journ. N. H. IV.* 287. *Schinz, Syn. Mamm. I.* 314.

Ailurus ochraceus, *Hodgs., Journ. As. Soc. Beng. XVI. p.* 1118.

PANDA, *Fr. Cuv.*

WÁH, OÁ, UKTONKA, SAKNAM, THÓNGWÁH, and THO-KYÉ, of the Tibetans, Nepalése, and Sikimites, *Hodgson.*

Wah and Chitwa, *Hardwicke.*

HAB. The declivities of the Sub-Himalayas, North and South, between 7,000 or 8,000, and 12,000 or 18,000 feet of elevation, *Hodgson.*

A. Presented by Maj.-Gen. T. Hardwicke.

B. Presented by I. T. Pearson, Esq.

The discovery of this animal is due to Major-General Thomas Hardwicke, who communicated a description of it to the Linnean Society of London, which was read on the 6th November, 1821. The cause of the delay of publication, for several years, in the Transactions of the Society, is explained in a note by the Secretary appended to General Hardwicke's paper. Meanwhile, a specimen forwarded to Paris by M. Duvaucel enabled M. Fred. Cuvier to name and define the

new genus, and to publish a figure and description in the 50th fascicule of the Mammif. Lithogr.

More recently B. H. Hodgson, Esq., the zealous zoologist of Northern India, has had an opportunity of examining in its native country, all the peculiarities of the anatomy, external form, and habits of this interesting animal.—Journal of the Asiatic Society of Bengal, Vol. XVI. p. 1113, from which we extract the following: "Nepalese Ailurus. Above, deep ochreous red; below and the ears, entire limbs and tip of tail, jet black. Head and tail paler than the body, and fulvous*. . . . . . Face, chin, and lining of the ears, white. From eyes to gape, a broad vertical line of ochreous red, blending with the dark inferior surface. . . . . .Hairy pads albescent. Moustaches white. Eyes deep brown. Nude muzzle black. Snout to vent twenty-two inches. Head five and a half. Tail sixteen. Height, nine to nine and a half. Weight seven to eight pounds. Pelage very thick, loosely applied to the skin, of two sorts; the outer hair, rather harsh than fine, straight, of moderate equal length (one and a half inch), and covering every part of the animal save the extremity of its nose; the inner vest shorter, sparer, and woolly. Internally the pelage is dusky; externally, deep ochreous: and on the back the hairs are more or less tipt with fulvous, especially in old age. In their general appearance the Wáhs are quite unique. They have a short sharp conic face, ending in a neat round muffle, in which the dog-like nostrils are pierced anterio-laterally; a small unprominent eye, situated nearer to the nose than to the ear, and having a round, nearly unchangeable pupil; rather small moustaches and minor tufts over the eyes, behind the gape, on the cheeks and on the chin; a broad rounded head; moderate sized, highly but remotely placed; ears of a narrow concoid form tending to a point, and almost hid by their ample confluent lining and tufts; a longish yet thick neck and body; short, strong, plantigrade limbs, ending in large very mobile pentadactylous feet, armed with feline talons and enveloped in woolly socks with leporine completeness; and, lastly, a long, thick, cylindrico-tapering tail, which is trailed like a fox's brush and neither convolved with the Paradoxuri, nor prehensile with the Arctictes and Potos, close as undoubtedly is the relationship of these genera, and especially the last named, to Ailurus.

"These quiet inoffensive animals, in their manner and diet, much resemble the Badgers of our land, the Lemurs of Madagascar, and the Racoons, Coatis, and Potos of America, the last most nearly; but as few persons are familiar with these animals, I shall, to avoid the

* This paler hue displayed in frequent rings on the tail.

illustration of ignotum per ignotius, proceed to mark the differences from the first-named animals, to wit, that the Badgers are sub-omnivorous diggers, dwelling in cavities of their own formation, whereas the Wáhs are vegetalivorous climbers, frequenting trees much, but breeding and feeding chiefly on the ground, and having their retreat in the natural resiliencies of rocks. They are monogamous, and live in pairs or small families, consisting of the parents and offspring, who all remain together till the next brood is about to appear, when the mother drives the grown young off. How long the female gestates I cannot learn, but she brings forth amid the recesses of the rocks in spring or early summer, almost always two at a birth, one of which is frequently much larger than the other, though the sexes at maturity hardly differ in size and not at all in aspect, nor the young from the parents in the latter respect. The Ailuri feed on fruits, tuberous roots, thick sprouts such as those of the Chinese bamboo, acorns, beech mast, and eggs. The last they are very fond of, and eating them is the nearest approach they make to animal food, unless we must also add to the list of their eatables the young of birds and of small mammals—which I doubt, though I am assured of the fact. In general, the Wáhs eschew flesh, fish, insects, reptiles, absolutely. But they love milk and ghee, and constantly make their way furtively into remote dairies and cowherds' cottages to possess themselves of those luxuries. Their ordinary feeding times are early morn and eve. They sleep a deal in the day and dislike strong lights, though not nocturnal in their habits of seeking food. Their manners are staid and tranquil: their movements slow and deliberate: their tempers placid and docile, so that they are easily tamed and may be suffered to go abroad soon after they are taken, even though mature, and still more if young. They are delicate animals, and cannot endure heat at all, nor cold well, amply and entirely as they are clad in fur. They are not pugnacious nor noisy, but remarkably the contrary of both. As climbers, no quadrupeds can surpass, and very few equal them, but on the ground they move awkwardly as well as slowly, yet without any special embarrassment. The Wáhs, as I have observed above, sleep much by day, though not strictly noctivagrant, and they repose frequently in an upright attitude, resting on the large broad palma and planta with the head tucked between the fore legs and under the chest, like Racoons and Lemurs, but more generally like dogs and cats, that is, laid on the side and rolled into a ball, the head being concealed by the bushy tail, which is carefully drawn round so as to cover the eyes and exclude the light. The Wáhs have little of that eminent development of the senses which distinguishes most animals as opposed to

man: their touch, sight, and hearing are dull: their smell not very acute, though the quickest sense they have; and hence they are easily taken, having, moreover, little speed, cunning, or ferocity to protect them. I have had many brought to me, and have kept several for a year or two in Nepal, feeding them on rice and milk, or milk only, all of which they like, but wholly refuse rats, fish, insects, snakes, and rarely and reluctantly taking flesh of any kind. I have often put a small live fowl into their cage, but seldom knew them kill, and never eat it, though if it approached them too nearly, they would rush at it and give it a severe and possibly fatal blow with the fore paws. The amenity of their ordinary disposition is finely portrayed in their gentle countenances, and, as they are free from all offensive odour, they would make nice pets for ladies, particularly when young. They drink by lapping with the tongue, and moderately. They hiss and spit like cats when angered, and, if extremely so, utter a short deep grunt, like that of a young bear, but ordinarily they are quite silent. The flesh is never eaten; but from the prepared pelage caps are made, and that is the limit of their economic value."

Fam. TALPIDÆ, *Gray, Cat. Mamm. Br. Mus. Syst. List. XXI.*

x. FOSSORES. *a.* TALPINA.

Genus TALPA, *Linn. et al.*

140. *TALPA MICRURA, Hodgson.*

Talpa micrura, *Hodgson, Journ. As. Soc. Beng. X. p.* 910. *Calc. Journ. Nat. Hist. IV. p.* 288. *Gray, Cat. Mamm. Br. Mus. p.* 75. *Cat. Hodgs. Coll. p.* 16. *Schinz, Syn. Mamm. p.* 289.

? Talpa cryptura, *Blyth, Journ. As. Soc. Beng. XII.* 2, *p.* 928.

Talpa europæa (var. Siberica), *Pallas, Z. R. A. I.* 126 ?

Talpa europæa, *Robinson, Assam, p.* 96.

Mole, *Hodgson, Journ. As. Soc. Beng. I. p.* 340.

HAB. Northern and central region of Nepal, *Hodgson.* Kashmir, *Elphinstone.*

A. Presented by B. H. Hodgson, Esq.

B. Presented by the Asiatic Society of Bengal.

"Specific character: uniform velvet-black with silvery-gray gloss, iridescent when moist; nude snout; feet and tail fleshy-white; the last very minute; structure otherwise typical. Snout to rump four and three-quarter inches. Head one and three-quarters. Tail three-six-teenths. Palma and nails seven-eighths. Planta and nails thirteen-sixteenths."—(Hodgson, Journ. As. Soc. X. p. 910.)

In the eleventh volume of the Journ. As. Soc. Beng. p. 95, Mr. Blyth gives various details on the distribution of various species of Talpa in India.

xx. AMBULATORES. *c.* TUPAINA. *Gray, Cat. Mamm. Br. Mus. Syst. List. XXI.*

Genus TUPAIA, *Raffles, Trans. Linn. Soc. XIII. p.* 256. *Fischer et al.*

CLADOBATES, *Fr. Cuv., Lesson, et al.*
HYLOGALE, *Temminck.*
HYLOGALEA, *Schlegel and Müller, Verhandl. over de Nat. Gesch. &c. p.* 160.
SOREX, *Diard and Duvaucel, Asiatic Researches, XIV. p.* 471.
GLISOREX,* *Desmarest, Mamm. Suppl.* 535.

141. *TUPAIA JAVANICA, Horsfield, Zool. Researches in Java.*

Tupaia javanica, *Fischer, Syn. Mamm. p.* 260. *Gray, Cat. Mamm. Br. Mus. p.* 76. *Zool. H. M. Ship Samarang, p.* 18. *Vig. and Horsf., Append. to Life of Sir T. S. Raffles, p.* 637. *Desmar., Mamm. Suppl. p.* 536.
Hylogale javanica, *Temminck. Müller, over de Zoogd. v. d. Ind. Archip. pp.* 25, 26.
Hylogalea javanica, *Schlegel and Müller, Verhandl. over de Natuurl. Gesch. &c. p.* 160, *&c.*

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* Mons. Desmarest, and several other zoologists, probably not consulting the original description of MM. Diard and Duvaucel, supposed that these naturalists have proposed the name of Sorexglis as a generic designation; while their description of this animal in the Asiatic Researches is entitled: "Sur une nouvelle espèce de Sorex,—*Sorex Glis*" (D. D.), which shows clearly that they considered it as a species of Sorex, and not as a new genus.—(Asiatic Researches, XIV. p. 472.)

Cladobates javanicus, *Less. Man. p.* 122. *Schinz, Syn. Mamm. p.* 261.

Bangsring, or Sinsring, of the Javanese of the province of Blambangan, Eastern Java.

Emes of the Sundanere.

Hab. Java, *Horsfield.* Sumatra, Java, Borneo, *Müller.* Aracan, *Blyth.*

A. Horsfield's Collection from Java.

B A skin, not perfect, from Aracan. Presented by the Asiatic Society of Bengal.

142. *TUPAIA FERRUGINEA*, *Raffles, Trans. Linn. Soc. XIII. p.* 256.

Tupaia ferruginea, *Horsf. Zool. Research. in Java; Plate of Illustrations No.* 3, *Dental System. Gray, Cat. Mamm. Br. Mus. p.* 77. *Zoology of H. M. Ship Samarang, p.* 18. *Vig. and Horsfield, Appendix to Life of Sir T. S. Raffles, p.* 637. *Desmar., Mamm. Suppl. p.* 536. *Cantor, Catal. of Mamm. p.* 18.

Hylogale ferruginea, *Temminck. Müller, Tafel der Zoogd. v. d. Ind. Archip. &c.*

Hylogalea ferruginea, *Schlegel and Müller, Verhand. over de Natuurl. Gesch. &c. p.* 166.

Cladobates ferruginea, *Less., Man. p.* 122. *Schinz, Syn. Mamm. p.* 260.

Sorex Glis, *MM. Diard and Duvaucel, Asiat. Research. XIV. p.* 470, *with a figure.*

Tupai Press, of the Malays on Sumatra, *Raffles.*

Kekkes, of the Sundanese on Java.

Hab. Sumatra, Penang, and Singapore, *Raffles.* Java, Sumatra, and Borneo, *Müller.*

A. Presented by Sir T. S. Raffles.

Besides the species of Tupaia above mentioned, several other species occur in the Indian Archipelago, namely, *Tupaia tana,* Raffles (Trans. Linn. Soc. XIII. p. 257), found on Sumatra according to Raffles; on Sumatra and Borneo, Müller. *Tupaia (Hylogalea) murina,* Schlegel and Müller (Verhand. over de Nat. Gesch. &c. p. 160), discovered on Borneo by M. Diard.

On the continent of Asia one species has been discovered during Belanger's Voyage, &c., the *Tupaia du Pegou* of M. Is. Geoffroy; the *T. peguana*, Lesson; *T. Belangeri*, Wagner. The *T.* (*Cladobates*) *speciosa* of Wagner, is, according to the statements of MM. Müller and Schlegel, a mere variety of *Tupaia tana*.

This interesting genus of Sorecine mammalia has been discovered since the commencement of the present century. The first public notice of it is due to the zeal of Sir T. S. Raffles, who, soon after assuming the government of Fort Marlborough, in Sumatra, commenced a general research into the natural history of the Indian Archipelago, embracing all departments. In the class of mammalia he engaged the assistance of MM. Diard and Duvaucel, who accompanied him, during part of the years 1819 and 1820, in his official voyages, during one of which the *Tupaia ferruginea* was discovered, respecting which Sir T. S. Raffles states :—" This singular little animal was first observed tame in the house of a gentleman at Penang, and afterwards found wild at Singapore and in the woods near Bencoolen, where it lives on the fruit of the Kayo gadis, &c."—(Descriptive Catalogue of a Zoological Collection made on account of the Hon. East-India Company, in the island of Sumatra and its vicinity, under the direction of Sir Thomas Stamford Raffles, Lieut.-Gov. of Fort Marlborough. Trans. Linn. Soc. XIII. p. 239, &c. Read December 5th, 1820.)

By desire of Sir T. S. Raffles, a description of this animal was prepared, early in the year 1820, by MM. Diard and Duvaucel, which he presented to his friend Major-General Thomas Hardwicke, to be disposed of at the pleasure of the Asiatic Society of Bengal, and which was published in the fourteenth volume of the Asiatic Researches, p. 471, &c. Fort William, February, 1820.*

The *Tupaia javanica* was discovered some years before the *T. ferruginea*, but no public notice was given of it until the publication of the Zoological Researches in Java, in 1821, where it is stated :— " The Bangsring (*Tupaia javanica*) fell under my observation during an early period of my researches in Java. In traversing the province of Blambangan, in the year 1806, I discovered it in the extensive forests which cover almost entirely the eastern extremity of the island.

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* This description is entitled, " Notice.—Sur une nouvelle espèce de Sorex—*Sorex Glis* (D.D.). (Asiatic Researches, XIV. p. 473.)—" Pendant la durée de nos séjours à Pulo Penang et Sincapore, nous avons plusieurs fois tué dans les bois un petit quadrupède, que nous prîmes d'abord pour un écureuil, mais que nous reconnûmes bientôt, en l'examinant, appartenir à la famille des Insectivores," &c.

During the period above mentioned I obtained but two individuals. One of these was forwarded to the Museum of the Honourable East-India Company in 1812, with a few remarks on its locality, food, and manners; and the other formed part of the collection which was brought to England by me in 1819."

Dr. Sal. Müller, and the other Dutch naturalists, who examined minutely the western parts of Java, inform us that the *Tupaia javanica* is not unfrequent in the dense forests of these districts, where its range extends from the coast to an elevation of about 4,000 feet above the sea.

The form and the exterior of the different species of Tupaia are minutely described by the Dutch naturalists in the Verhand. over Natuurl. Gesch. p. 160, &c., and in Horsfield's Zool. Research. &c.

As to the habits of the various species of this genus, all zoologists who have had an opportunity of observing them in their native countries agree in ascribing to them a character easily suiting itself to the society of man, and capable of some training.

In the thirteenth volume of the Trans. Linn. Soc. p. 257, Sir T. S. Raffles states :—"These animals are as tame and sprightly as squirrels. The tame one mentioned in the description was suffered to go about at perfect liberty, ranged in freedom over the whole house, and never failed to present himself on the breakfast and dinner table, where he partook of fruit and milk."—*Tupaia ferruginea.*

Dr. Sal. Müller describes the *T. javanica* as a confiding, simple, and lively little animal, always in motion, seeking its food at one time on the ground, among moss and dry leaves, at another along the stems of trees, dipping its nose rapidly into the fissures and hollows. It forms a nest of moss, at some distance above the ground, supporting it on clusters of orchideous plants, which attach themselves to the forest trees.

Dr. Cantor communicates the following observations :—"The young of this very numerous species in hilly jungle is easily tamed, and becomes familiar with its feeder, though towards strangers it retains its original mistrust, which, in mature age, is scarcely reclaimable. In a state of nature, it lives singly or in pairs, fiercely attacking intruders of its own species. When several are confined together, they fight each other, or jointly attack and destroy the weakest. The natural food is mixed insectivorous and frugivorous. In confinement, individuals may be fed exclusively on either, though preference is evinced for insects; and eggs, fish, and earth-worms are equally relished. A short, peculiar, tremulous whistling sound, often heard by calls and

answers, in the Malayan jungle, marks their pleasurable emotions; as, for instance, on the appearance of food, while the contrary is expressed by shrill protracted cries. Their disposition is very restless, and their great agility enables them to perform the most extraordinary bounds in all directions, in which exercise they spend the day, till night sends them to sleep in their rudely-constructed lairs in the highest branches of trees. At times they will sit on their haunches, holding their food between the fore-legs, and after feeding, they smooth the head and face with both fore-paws, and lick the lips and palms. They are also fond of water, both to drink and to bathe in. The female usually produces one young."—(Catalogue of Mammalia inhabiting the Malayan Peninsula and Islands. By Theodore Cantor, M.D., &c.)

d. ERINACINA, *Gray, Cat. Br. Mus. Syst. List, XXI.*

Genus SOREX, *Linn.*

143. *SOREX MURINUS, Linn. Syst. Nat.* 12, *I. p.* 74, *ed. Gmel. I. p.* 114.

Sorex myosurus, *Pallas, Act. Petrop.* 1781. *Müller, Over de Zoogd. v. d. Ind. Archip. p.* 26.

SEEKA, of the Assamese, *Walker, Calc. J. N. H. III.* 265.

HAB. Upper India, Nepal, *Hodgson.* Assam, *Walker.* Java, Sumatra, Borneo, and Amboina, *Müller.*

A. Presented by B. H. Hodgson, Esq.

144. *SOREX GRIFFITHII, Horsfield.*

Colour, deep blackish brown throughout, with a slight rufous reflection in a certain light. Fur short, close, soft, and adpressed. Tail thick at the base, with a few long, very slender, straggling hairs along its entire length. Ears small and rounded. Snout elongated. Length from the tip of the snout to the root of the tail, $5\frac{3}{4}$ inches. Tail, $2\frac{1}{2}$ inches.

Allied to *S. murinus,* but differing essentially by the uniform deep blackish-brown tint, and by shortness, delicacy, and softness of the fur.

HAB. Afghanistan.

A. Griffith's Collection from Afghanistan.

145. *SOREX CŒRULESCENS, Shaw, Gen. Zool. I. part* 2, *p.* 533.

Sorex giganteus, *Is. Geoffr.*
Sorex pilorides, *Shaw, Mus. Lever.*

Hab. India generally, and the Eastern Islands. Bootan, *Pemberton.*

A. Major Pemberton's Collection from Bootan.

146. *SOREX INDICUS, Geoffr., Ann. Mus. XVII. p.* 185.

Sorex Sonneratii, *Is. Geoffr.*

Hab. Continent and Islands of India. Dukhun, *Colonel Sykes.*

A. Presented by Colonel Sykes.

147. *SOREX NIGER, Elliot, MS.*

Blackish brown, with a rufescent shade on the upper parts. Abdomen grayish. Tail equal in length to the entire animal, exclusive of the head, gradually tapering to a point. Snout greatly attenuated. Length of the head and body 3½ inches; of the tail, 2½ inches.

Hab. Madras, *Elliot.*

A. Presented by Colonel Sykes.

148. *SOREX CAUDATUS, Hodgson, Ann. and Mag. of Nat. Hist. New Series, III. p.* 203.

General habit of the extremities and tail, comparatively slender. Colour saturate blackish brown, very slightly rufescent in certain aspects. Snout moderately elongated, furnished at the sides with long delicate hairs. Tail slender, nearly naked, very slightly attenuated, equal in length to the body and head. Length of the body and head 2½ inches; of the tail the same.

Hab. Sikim and Darjeling, Upper India, *Hodgson.*

A. Presented by B. H. Hodgson, Esq.

149. *SOREX SIKIMENSIS, Hodgson, Ann. and Mag. of Nat. Hist. New Series, III. p.* 203.

Colour above and of the head, saturated blackish brown, slightly rufescent, with a silvery cast in certain lights; grayish underneath. Fur short, smooth, delicately soft, and closely adpressed. Snout long, regularly attenuated, with few lateral hairs. Body abruptly terminated behind. Tail slender, rigidly straight, naked, half as long as the body. Ears concealed. Discovered, with the preceding species, by B. H. Hodgson, Esq.

HAB. Sikim and Darjeling, Upper India.

A. Presented by B. H. Hodgson, Esq.

Genus CORSIRA, *Gray, Proceed. Zool. Soc.* 1837, *p.* 123.

150. *CORSIRA NIGRESCENS, Gray, Ann. and Mag. Nat. Hist. X. p.* 261.

HAB. Bootan, *Pemberton.*

A. Major Pemberton's Collection from Bootan.

Genus ERINACEUS, *Linn.*

151. *ERINACEUS COLLARIS, Gray, Cat. Mamm. Br. Mus. p.* 81. *Illust. Ind. Zool. I. tab.* 8.

HAB. India generally. Madras, *Walter Elliot, Esq.* Afghanistan, *Griffith.* Candahar, *Captain Hutton.*

A. Griffith's Collection from Afghanistan.

152. *ERINACEUS NUDIVENTRIS, Horsf.*

? Erinaceus micropus, *Blyth, J. A. S. B. XV. p.* 170.

HAB. Madras, *Elliot.*

A. Presented by Walter Elliot, Esq.

Size, about one-half of that of *E. collaris.* Form elongated. Tail short, concealed. Spines, yellowish white at the base and tip, with a blackish ring in the middle. Ears moderately large. Head and ears

naked, of a sooty-black colour throughout. Throat, neck to the region of the ears, breast and abdomen, covered with a naked skin of a dirty chestnut-brown colour, passing into blackish on the abdomen, and into dirty yellowish at the sides.

The uniform sooty colour of the head and ears, with the absence of any hairy covering, and the nakedness of the lower neck, breast, and abdomen, constitute the chief distinguishing character of the specimen described. Its form is also more elongate than that of *E. collaris*, and the rings of the spines are of a darker colour.

The description, however, is from a single specimen, and the comparison of other subjects is required, to determine its title to a specific rank.

In the fifteenth volume of the Journ. As. Soc. Beng. p. 170, Mr. E. Blyth enumerates the Indian species of Erinaceus hitherto indicated by authors; namely, *E. collaris*, Gray; *E. spatangus*, Bennett; *E. Grayi*, Bennett; and *E. mentalis*, Gray; with reference also to the species which Captain Hutton observed in Candahar.—(J. A. S. B. XIV. p. 351, &c.) For one of these, No. 18 of Captain Hutton's list, which is still doubtful, Mr. Blyth proposes provisionally the name of *E. micropus*.

In the Rough Notes on the Zoology of Candahar (Journ. As. Soc. Beng. Vol. XIV. p. 352), Captain Hutton communicates the following remarks on the habits of the species of Erinaceus which he found in that district:—"The habits of all three species are the same. They are nocturnal, and during the day conceal themselves in holes, or in the tufts of high jungle grass. Their food consists of insects, chiefly of a small beetle which is abundant on the sandy tracts of Bhawulpore, and belongs to the genus Blaps. They also feed on lizards and snails. When touched, they have the habit of suddenly jerking up the back with some force, so as to prick the fingers or mouth of the assailant, and at the same time emitting a blowing sound, not unlike the noise produced when blowing upon a flame with a pair of bellows. When alarmed, they have the power of rolling themselves up into a complete ball, concealing the head and limbs, as does the European hedgehog." Respecting *E. collaris*, he observes, "On hearing any noise, it jerks the skin and quills of the neck completely over its head, leaving only the tip of the nose free, which is turned quickly in every direction, to ascertain the nature of the approaching danger. If a foe in reality come nigh it, the head is doubled under the belly towards the tail, and the legs being withdrawn at the same time, it presents nothing but a prickly ball to its assailant, and which is in most cases a sufficient protection. In this state it remains for some time perfectly motionless, until all being

quiet, the danger past, it ventures first slowly, and almost imperceptibly, to exsert the nose, the nostrils working quickly, as if to ascertain that all is safe again. It then gradually uncoils until the eyes are left free, and if satisfied that its foe has passed on, it opens up, and walks off with a quick but unsteady gait; or if again startled by the slightest noise near it, it is instantly intrenched within its thorny armour. All the species use the snout much in the same manner as the hog does, turning up the leaves and grasses in search of food, and shoving each other out of the way with it when angry. They make a grunting sort of noise when irritated. They are remarkably tenacious of life, bearing long abstinence with apparent ease—a provision of nature highly useful and essential in the desert tracts they inhabit. It is probable, too, that they remain during the cold season in a semitorpid state, as the species which occurs in Afghanistan, hybernates."

153. *ERINACEUS AURITUS, Pallas, Nov. Comment. Acad. Petrop. XIV. p.* 575.

HAB. Southern Russia, *Pallas.* Mesopotamia, *Commander Jones, of the Indian Navy.*

A. Forwarded by the Government of Bombay, being part of an interesting Zoological Collection made by Commander Jones, of the Indian Navy, and presented to the Honourable Court of Directors.

A very delicate fur, consisting of long silky hairs of a white colour, covers the head, breast, and abdomen of this species, forming also along the sides and the rump a beautiful ornamental border.

Order III. CETE.

Fam. 2. DELPHINIDÆ, *Gray, Cat. Mamm. Br. Mus. Syst. List, XXIII.*

Genus Platanista, *Gray, Illust. Ind. Zool. II. pl.* 24.

Delphinus, *Roxburgh, Lebeck, Shaw, et al.*
Platanistæ, *Plin., Hist. Nat. IX. c.* 15. *Fischer, Synops. Mamm.* 506.

154. *PLATANISTA GANGETICA, Gray, Sp. Illust. Ind. Zool. II. pl.* 24.

Delphinus gangeticus, *Roxburgh, Asiat. Research. VII. p.* 170.

Hab. India, the Ganges.

A. The Skull, complete.
B. Upper and Lower Jaws of an imperfect Skull.

Genus Monodon, *Linn. et al.*

155. *MONODON MONOCEROS, Linn.*

Unicorn Narwhal, *Shaw, Gen. Zool. II.* 2, *p.* 473.

Hab. Northern Ocean of Europe, Greenland, Iceland.

A. The Tooth.

Fam. 4. HALICORIDÆ, *Gray, Cat. Mamm. Br. Mus. Syst. List, XXIII.*

Genus Halicore, *Illig. et al.*

156. *HALICORE DUGUNG, Fr. Cuv. et Geoffr., Mamm. fasc.* 37.

Duyong, of the Malays, erroneously changed to Dugung.

Hab. Indian Ocean, West Coast of Sumatra, *Raffles, Tr. Linn. Soc. XIII. p.* 272.

A. Skull, from Finlayson's Collection, Siam.

Order IV. GLIRES.

Fam. 1. MURIDÆ, *Gray, Cat. Mamm. Br. Mus. Syst. List, XXIII.*

a. MURINA.

Genus MUS, *Linn.*

157. ***MUS DECUMANUS**, Pallas.*

CHOOHA and GHURKA CHOOHA, Dekhani, *Elliot.*
CHOOA, of the Mahrattas, *Col. Sykes.*

HAB. Persia and India generally. Dukhun, *Col. Sykes.* Indian Archipelago, *Dr. Sal. Müller.* Introduced into Europe about the year 1730, *Fischer.*

A. Presented by Colonel Sykes.

158. ***MUS DECUMANOIDES**, Temminck (not Hodgson).*

HAB. Bengal, *General Thomas Hardwicke.*

A. B. Presented by General T. Hardwicke.

159. ***MUS BANDICOTA**, Bechstein, Penn. Nat. Gesch. übers. v. Bechstein. Fischer, Syn. Mamm.* 314.

Mus giganteus, *Hardw., Trans. Linn. Soc. VIII. t.* 18.
Mus malabaricus, *Shaw, Zool.*
Mus Icria, *Fr. (Buchanan) Ham. MSS. Mus. Soc. Ind. Orient.*
Bandicote rat, *Penn., Hist. of Quadr.*
IKARA, Bengali. INDUR, Sanskr. A sort of rat.
PANDI KOKU, Telugu, a large rat, commonly called Bandy-coot, from *Pandi,* a Hog, and *Kokka,* a Rat. The Hog-Rat, *Wilson, Elliot, Campbell.*
GHONS, Dekhani, *Elliot.*
TIKUS BESAR, Malayan peninsula, *Cantor.*

HAB. Bengal and peninsula of India, *Hamilton, Elliot.* Malayan peninsula, *Cantor.*

A. B. Two prepared skins, not in good condition. Presented by Gen. T. Hardwicke.

C. A Drawing from the Collection of Dr. F. (Buchanan) Hamilton.

160. *MUS (RATTUS), NEMORIVAGUS, Hodgson, Journ. As. Soc. Beng. V. p.* 234.

"Throughout dusky brown; the centre of the belly only being paler and hoary blue." Length, snout to rump 12 inches; tail 9½ inches.

This species represents the *M. Bandicota* of Bengal, in the higher regions of Nepal: it is about one-third smaller.

HAB. Northern Hilly Regions of Nepal, *Hodgson.*

A. A prepared Skin, not in good condition. Presented by B. H. Hodgson, Esq.

161. *MUS ARBOREUS, Buchanan, MS.*

GÁCHHUĂ INDUR, Beng. The TREE-RAT, a species of rat which inhabits trees, and feeds on their fruit, *Carey.*

HAB. Bengal, *Dr. Fr.* (*Buchanan*) *Hamilton.*

A. A Drawing from the Collection of Dr. F. (Buchanan) Hamilton.

B. A prepared Skin, from the Collection of B. H. Hodgson, Esq.—greatly resembles Dr. Hamilton's Drawing.

"This animal lives on cocoa-nut-trees, and where these do not grow, on bamboos, from whence its name, Tree-rat, is derived. Each pair builds a nest within the cavity of the branches, and there bring forth four, five, or six young. This is in Bhadur month, which corresponds with part of August and September.

"They eat grain, which they collect in their nest, and they destroy the cocoa-nuts when young, and these are their most favourite food. They never live in houses, but at night come there to steal. In shape this has a very strong resemblance to the Jenkoo Indoor, being more elegantly formed than the common rat, and having a much narrower face and much larger eyes. Its tail, however, exactly resembles that of the common rat, and consists of a great number of very narrow scaly rings, that have between them short bristles, which are generally approximated to each other three by three.

"Like the Jenkoo (*Gerbillus indicus*), it frequently sits erect on the hinder legs, but this also I observe in the common rat. The irides are dark, the whiskers black, the ears naked. The upper teeth are not divided by a furrow, like those of the Jenkoo; the incisors are yellow,

and those of the lower jaw are parallel. The upper parts of the body are a dark iron-gray, consisting of black and tawny hairs, of which the former are the longest and most numerous. The lower parts and legs are white; the naked parts of the nose and toes are a pale flesh-colour. The hinder feet extend to the hock joint.

"A full-grown male measured, from the nose to the tail, seven inches; tail, seven inches and a half. A female measured eight inches and a half, with nine inches of tail."—Dr. F. (Buchanan) Hamilton's MS.

162. *MUS SETIFER, Horsfield, Zool. Research. with a figure. Müller, Over de Zoogd. v. d. Ind. Archip. p.* 36. *Cantor, Catal. of Malayan Mamm. p.* 46. *Gray, Cat. Mamm. Br. Mus.* 108.

HAB. Java, *Horsfield.* Java and Sumatra, *Dr. Sal. Müller.* Penang, *Cantor.*

A. Horsfield's Collection from Java.

Allied to *Mus bandicota*, but clearly distinct as a species.

163. *MUS FLAVESCENS, Elliot, Madras Journ. Lit. Sci. p.* 214.

HAB. Madras, *Elliot.*

A. Presented by Walter Elliot, Esq.

B. Presented by the Asiatic Society of Bengal.

164. *MUS BRUNNEUS, Hodgson? Ann. and Mag. of Nat. Hist. XV. p.* 266.

"Above, rusty brown; below, rusty, more or less albescent; extremities pale, nearly fleshy white. Tail, barely longer than the head and body; snout to vent, 9¼ inches; tail, 2½; head, 2¼; ear, 1."—(Ann. Nat. Hist. as above cited.)

The dimensions here given, as well as the description, agree with our specimen; excepting the length of the tail, which is somewhat shorter than the body. This species is nearly allied to *M. decumanus.*

Common house-rat of Nepal.

HAB. Nepal, *Hodgson.*

A. Presented by B. H. Hodgson, Esq.

165. *MUS BRUNNEUSCULUS, Hodgson, Ann. and Mag. of Nat. Hist. XV. p.* 267.

"Closely resembling the last, but considerably smaller. Above, rusty brown; below, rusty; extremities pale."

The specimen in the Company's Museum measures, from snout to vent, 6¼ inches; the tail, 3 inches, having lost, apparently, nearly one half of its length; head, 1¾ inch.

HAB. Nepal, *Hodgson.*

A. Presented by B. H. Hodgson, Esq.

166. *MUS NIVIVENTER, Hodgson? Ann. and Mag. of Nat. Hist. XV. p.* 267.

"Above, blackish brown, shaded with rufous; below, entirely pure white."

The specimen in the Museum measures, snout to vent, 5 inches; tail, 4½ inches.

A House-rat, *Hodgson.*

HAB. Nepal, *Hodgson.* Madras?

A.

167. *MUS DUBIUS, Hodgson, Ann. and Mag. of Nat. Hist. XV. p.* 268.

"Above, dusky brown, touched with fawn; below, sordid fawn."

The specimen in the Museum measures, snout to vent, 3 inches; tail (not quite perfect), 1¾ inches.

A House-mouse, *Hodgson.*

HAB. Nepal, *Hodgson.*

A. Presented by B. H. Hodgson, Esq.

168. *MUS DARJILINGENSIS, Hodgson, Ann. and Mag. of Nat. Hist. New Series, III. p.* 203.

Above, dusky brown, with a slight chestnut reflection; underneath, pale yellowish white. Snout to vent, 3 inches; ears, long; tail, 2½ inches. Allied to the last species. Proportions of body, tail, and extremities, comparatively slender.

HAB. Sikim, *Hodgson.*

A. Presented by B. H. Hodgson, Esq.

169. *MUS ÆQUICAUDALIS*, *Hodgson, Ann. and Mag. of Nat. Hist. New Series, III. p.* 203.

Pure dark-brown above, with a very slight cast of rufescent in a certain aspect; underneath, from the chin to the vent with interior of the thighs, yellowish white. Ears nearly an inch long; head proportionally long.

Dimensions: from the snout to the root of the tail, 8½ inches; tail, in the living animal, equal in length to the body (Hodgson, *l. cit.*); head, 2½ inches.

170. *MUS CAUDATIOR*, *Hodgson, Ann. and Mag. of Nat. Hist. New Series, III. p.* 203.

Above, chestnut-brown, with a rufous shade, more clear and passing into reddish on the rump; underneath from the chin to the vent and the interior of the thighs white, with a very slight yellowish shade. Muzzle rather sharp; ears proportionally long; tail exceeding the body in length.—(Hodgson, *l. cit.*) Body and head, 5¾ inches long; tail, in the prepared specimen, 6 inches.

171. *MUS LEUCOSTERNUM*, *Ruppell, Mus. Senckb.*

HAB. Abyssinia.

A. From Sir W. C. Harris's Collection in Abyssinia.

Genus GOLÚNDA, *Gray, Mag. Nat. Hist. N. S. p.* 577.

MURIS Species, *Elliot.*

172. *GOLUNDA MELTADA*, *Gray, Mag. N. Hist. l. cit.*

Mus lanuginosus, *Elliot, Madr. Journ. Lit. and Sc. X. p.* 212.

MELTADA, of the Wuddurs, *Elliot.*

KERA-ILEI, of the Canarese, *Elliot.*

HAB. Southern Mahratta Country, *Elliot.*

A. B. Presented by W. Elliot, Esq.

C. A variety or distinct species from Griffith's Collection in Afghanistan.

The specimens contained in the Museum agree with the description of W. Elliot, Esq., excepting the tail, which does not exceed an inch in length.

Genus Nesokia, *Gray, Ann. and Mag. Nat. Hist. X.* 1842, *p.* 264.

Muris Species, *Gray, Mag. Nat. Hist. N. S. I. p.* 577.

173. *NESOKIA GRIFFITHII, Horsfield.*

Hab. Afghanistan, Pushut, *Griffith.*

A. Griffith's Collection from Afghanistan.

Fur, very soft and silky. Colour, above, dusky chestnut-brown, with streaks of a plumbeous tint, the separate hairs being of a leaden colour at the base, and chestnut-brown towards the extremity; chin, chest, and under parts of a lighter tint, passing into a grayish leaden colour on the abdomen. Ears moderately large: thumb of the fore feet very minute. Cutting-teeth flat anteriorly, comparatively large, broad, and nearly white. Tail nearly naked, and shorter than the body. Length, from snout to root of the tail, 6½ inches; of the tail, 3 inches.

In the definition of this genus (Ann. Nat. Hist. X. 265), Mr. Gray states that it is "easily known from *Mus* by the large size of the cutting-teeth, and the shortness of the tail; it appears to be intermediate between *Mus* and *Rhizomys.*"

In the *Nesokia Griffithii* this character is particularly developed, and forms one of the points which distinguish it from *Nesokia Kok* and *Nesokia Hardwickii,* described by Mr. Gray in the Mag. Nat. Hist. N. Ser. I. p. 577, &c.

Genus Cricetus, *G. Cuv. et al.*

Muris Species, *Linn. et al.*

174. *CRICETUS SONGARUS, Pallas, Sp.*

Mus songarus, *Pallas, Glir.*
Cricetus songarus, *Desmar.*

Hab. Kumaon, *Capt. R. Strachey.* Siberia, *Pallas et al.*

A. From Capt. R. Strachey's Collection in Ladakh.

b. Arvicolina.

Genus Neodon, *Ann. and Mag. Nat. Hist. Second Series, Vol. III. p.* 203.

The animal on which this genus is founded, Mr. Hodgson considers as a new type, though in many respects allied to *Arvicola.* The

incisors are the same; the grinders, above and below, are disposed in a regular compact series, so close as to be distinguished or separated from each other with difficulty, having individually slightly-elevated ridges or folds. In the upper jaw the anterior grinders respectively are somewhat larger than the rest in the series, and according to Mr. Gray's comparison with *Arvicola,* they are provided with an additional ridge or fold. In the lower jaw the series is nearly uniform, with a slight decrease posteriorly.

A more detailed account will be given by Mr. Hodgson, who discovered this genus in Upper India.

175. *NEODON SIKIMENSIS, Hodgson, Ann. and Mag. Nat. Hist. Sec. Ser. Vol. III. p.* 203.

Fur, very soft and silky, constituting an uniform external pelage; above, deep brownish black, with a slight rusty shade, minutely and copiously grizzled with hairs of a deep ferruginous tint; this colour extends over the top and sides of the head, body, tail, and the upper portion of the extremities; the chin, breast, and abdomen are deep bluish gray, with a slight ferruginous shade. The ears are of moderate size, and hairy externally. The habit and proportions resemble *Arvicola,* but the tail is comparatively short. Length from the snout to the root of the tail, 5 inches; of the tail, 1½ inch.

HAB. Sikim, *Hodgson.*

A. Presented by B. H. Hodgson, Esq.

Fam. 2. HYSTRICIDÆ, *Gray, Cat. Mamm. Br. Mus. Syst. List, XXIV.*

a. HYSTRICINA.

Genus HYSTRIX, *Linn. et al.*

176. *HYSTRIX LEUCURUS, Sykes, Proceed. Zool. Soc.* 1831, *p.* 103.

SAYAL, of the Mahrattas, *Col. Sykes.*

HAB. Dukhun, *Colonel Sykes.* Nepal, *Hodgson.*

A. Presented by Colonel Sykes.

Genus Atherura, *Cuv. Règn. An. Ed. II. I. p.* 215.

177. *ATHERURA FASCICULATA, Shaw, Sp.*

Hystrix fasciculata, *Shaw et al.*

Hab. Sumatra, *Raffles.* Java, Sumatra, Borneo, *Müller.* Malayan Peninsula, *Cantor.* Continent of India, *Dr. F. (Buchanan) Hamilton.*

A. A Drawing from the Collection of Dr. Francis (Buchanan) Hamilton.

Fam. 3. LEPORIDÆ, *Gray, Cat. Br. Mus. Syst. List, XXV.*

Genus Lepus, *Linn. et al.*

178. *LEPUS NIGRICOLLIS, Fr. Cuv. Sykes, Cat. Dukhun Mamm. Pr. Z. S.* 1831, *p.* 103.

? Lepus hurgosa, *Buchanan, MSS. Mysore, I. p.* 169.
Lepus kurgosa, *Gray, Cat. Mamm. Br. Mus. p.* 128.
Sussuh and Sassa, of the Mahrattas, *Col. Sykes and Walter Elliot, Esq.*
Malla, Canarese, *Elliot.*
Khargosh, Dekhani, *Elliot.*

Hab. Peninsula of India, *Sykes and Elliot.*

A. B. Presented by Col. Sykes.

179. *LEPUS MACROTUS, Hodgson, Journ. As. Soc. Beng. IX. p.* 1183.

Lepus ruficaudatus, *Is. Geoffr., Mag. Zool. II. t.* 9.

Hab. Gangetic Provinces and Sub-Himalaya, *Hodgson, l. cit.*

A. Presented by the Asiatic Society of Bengal.

Described by B. H. Hodgson, Esq., in the volume of the Asiatic Society above referred to.

180. *LEPUS OIOSTOLUS*, *Hodgson*, *Journ. As. Soc. Beng. IX. p.* 1186.

Lepus Œmodius, *Hodgs. MS. communicated to the Linn. Soc.*

Lepus tibetanus, *Waterh. P. Z. S.* 1841, *p.* 7.

HAB. Snowy region of the Himalayas, *Hodgson.* Tibet (Ladakh), *Capt. R. Strachey.*

A. From Capt. R. Strachey's Collection.
B. C. D. Several imperfect Skins.

Described by B. H. Hodgson, Esq., in the ninth volume of the Journ. As. Soc. *l. cit.* In a note, Mr. H. states that this and the former species were named respectively *Indicus* and *Œmodius.*

181. *LEPUS ÆGYPTIUS*, *Geoffr., Mamm. Egypt.*

HAB. Abyssinia.

A. From Sir W. C. Harris's Collection during his Mission to Abyssinia.

Genus CAPROLAGUS, *Blyth, Journ. As. Soc. Beng. XIV. p.* 248.

LEPORIS Species, *Pearson.*

182. *CAPROLAGUS HISPIDUS*, *Pearson, Sp.*

Lepus hispidus, *Pearson, Bengal Sporting Magazine, Aug.* 1843, *p.* 131.

HAB. Assam, *Pearson, McClelland.* Sikim, *Hodgson.*

A. From McClelland's Collection in Assam.
B. Presented by B. H. Hodgson, Esq.

Genus LAGOMYS, *G. Cuv. Règne An. Ed. II. I. p.* 218.

LEPORIS Species, *Pallas et al.*

183. *LAGOMYS NIPALENSIS*, *Hodgson, Journ. As. Soc. Beng. X. p.* 854, *with a figure.*

HAB. Nepal, *Hodgson.* Kumaon, *Capt. R. Strachey.*

A. B. Presented by B. H. Hodgson, Esq.
Several preserved Skins from Capt. R. Strachey's Collection in Kumaon.

184. *LAGOMYS RUFESCENS*, *Gray, Ann. and Mag. N. H.* 1842, *p.* 266.

HAB. Afghanistan, *Griffith.*

A. From Griffith's Collection in Afghanistan.

Fam. 4. JERBOIDÆ, *Gray, Cat. Mamm. Br. Mus. Syst. List, XXV.*

c. DIPINA.

Genus ALACTAGA, *Fr. Cuv., Proceed. Zool. Soc.* 1836, *p.* 141.

DIPUS, *Schreber, Pallas, et al.*

185. *ALACTAGA INDICA*, *Gray, Ann. and Mag. Nat. Hist. X. p.* 262.

Dipus acontion, *Pallas, Zoogr. Rosso, As.*
Alactaga acontium, *Pallas. Hutton, Notes on the Zool. of Cand. J. A. S. B. XV. p.* 137.
KHANEE, of the Afghans, *Hutton.*

HAB. Afghanistan, *Griffith.* Candahar, *Hutton.*

A. B. C. Adult.

D. E. F. Young. From Griffith's Collection in Afghanistan.

In defining this species (Ann. N. H. above cited), Mr. Gray points out its resemblance to *Dipus acontion* of Pallas, and the peculiarities in which it differs.

In the fifteenth volume of the J. A. S. B. p. 137, Capt. Hutton gives some interesting details of the species of *Alactaga* which he observed in Candahar:—" This beautiful little animal is abundant over all the stony plains throughout the country, burrowing deeply, and when unearthed, bounding away with most surprising agility, after the manner of the kangaroo-rat. It is easily tamed, and lives happily enough in confinement, if furnished with plenty of room to leap about. It sleeps all day, and so soundly, that it may be taken from its cage and examined without awaking it; or, at most, it will half open one eye, in a drowsy manner for an instant, and immediately close it again

in sleep. It retires to its burrows about the end of October, and remains dormant till the following April, when it throws off its lethargy, and again comes forth. It is doubtless the 'desert rat' mentioned by the late Captain Arthur Conolly, in his Overland Journey to India (p. 54, Vol. I.)."—(Hutton, Rough Notes on the Zoology of Candahar, J. A. S. B. XV. p. 137.)

Genus GERBILLUS, *Desmar. et al.*

DIPODIS Species, *Hardw., Schinz, et al.*

186. *GERBILLUS INDICUS*, *Hardw., Spec.*

Dipus indicus, *Hardw., Trans. Linn. Soc. VIII. p.* 279, *with a figure.*
Gerbillus indicus, *Desmar., Mamm. p.* 321. *Gray, Cat. Mamm. Br. Mus. p.* 132.
Mus Jencus, *Fr.* (*Buchanan*) *Hamilton, MS.*
HEREENA-MOOS, Antelope-rat, Bengalese.
JHENKOO INDUR, a species of Field-mouse, *Mus Jencus,* Carey, Beng. Dict.

HAB. Plains of Hindustan, *Hardwicke.*

A. A dried specimen, not in good condition.
B. A Drawing in Dr. F. Buchanan Hamilton's Collection.

"These animals live in holes, which they dig in the abrupt banks of rivers and ponds."—(Hamilton's MS.)

"These animals are very numerous about cultivated lands, and particularly destructive to wheat and barley crops, of which they lay up considerable hoards, in spacious burrows. A tribe of low Hindoos, called Kunjers, go in quest of them at proper seasons, to plunder their hoards, and often, within the space of twenty yards square, find as much corn in the ear, as could be crammed in a bushel."—(Hardwicke.)

187. *GERBILLUS ERYTHROURUS*, *Gray, Ann. and Mag. of Nat. Hist. X. p.* 266.

HAB. Afghanistan, *Griffith.*

A. Specimen agreeing with Mr. Gray's original description as above cited.

B. Adult. C. Young. Colour, isabella, slightly variegated, with plumbeous hairs.

D. E. Variety, perhaps a distinct species. Fur, fulvescent, undulated with black.

From Griffith's Collection.

e. SCIURINA.

Genus SCIURUS, *Linn. et al.*

188. *SCIURUS PLANTANI*, *Ljung.* *K. Vetensk, Acad. H.* 1801.

Sciurus Plantani, *Horsf., Zool. Research. with a figure.*
Plantane Squirrel, *Pennant,* 1781.
BAJING, of the Javanese and Malays.

HAB. Java, *Horsfield.* Java and Sumatra, *Müller.*

A. B. Horsfield's Collection from Java.

189. *SCIURUS INSIGNIS*, *Fred. Cuv., Mamm. fasc.* 34.

Sciurus insignis, *Horsf. Zool. Res. with a fig.*
BOKKOL, of the Javanese.
LARY, of the natives of Sumatra.

HAB. Java, *Horsfield.* Java and Sumatra, *Müller.*

A. Horsfield's Collection from Java.

190. *SCIURUS SUBLINEATUS*, *Waterhouse, Proc. Zool. Soc.* 1838.

Sciurus Delessertii, *Gervais, Mag. Zool.* 1842.

HAB. Madras, Nielgherry Hills.

A. Presented by Dr. A. T. Christie.

191. *SCIURUS McCLELLANDII*, *Horsfield, Proc. Zool. Soc.* 1839.

Sciurus trilineatus, *Gray,* 1828, *Cat. Mamm. Br. Mus.* 142.

HAB. Bengal and Assam, *McClelland.*

A. B. From McClelland's Collection in Assam.

192. *SCIURUS PALMARUM*, *Linn. Syst. Nat.* 12, *I. p.* 87.

Sciurus palmarum, *Horsf., Zool. Res.*
Rat palmiste, *Brisson.*
KHURREE, of the Mahrattas, *Sykes.*
GILHERI, Dekhani, *Elliot.*

HAB. Dukhun, *Col. Sykes.* Madras, *Walter Elliot, Esq.* Intratropical parts of Asia and Africa, *Fischer.*

A. B. Presented by Colonel Sykes.

193. *SCIURUS PENICILLATUS*, *Leach, Zool. Miscel.*

Sciurus palmarum, *var. Fischer, Syn. Mamm. p.* 358.

HAB. Peninsula of India, *W. Elliot, Esq.*

A. B. From the Madras presidency. Presented by R. Wight, Esq.

194. *SCIURUS NIGROVITTATUS*, *Horsfield, Zool. Research.*

HAB. Java, *Horsfield.* Java, Sumatra, Borneo, *Müller.*

A. B. Horsfield's Collection from Java.

195. *SCIURUS VITTATUS*, *Raffles, Trans. Linn. Soc. XIII. p.* 259.

Sciurus bivittatus, *Horsf. Zool. Res. Desm., Mamm. Suppl.* 543.

HAB. Sumatra, *Raffles, Müller.*

A. B. C. Presented by Sir T. S. Raffles.

196. *SCIURUS SUBFLAVIVENTRIS*, *McClelland, MS. Catal. of the Zool. of Assam.*

Sciurus subflaviventris, *Gray, Cat. Mamm. Br. Mus. p.* 144.
Sciurus Lokriah, *List of Mammalia, Pr. Z. Soc.* 1839, *p.* 151.

HAB. Assam, *McClelland.* Nepal, *Hodgson.*

A. B. Presented by B. H. Hodgson, Esq.
C. From McClelland's Collection. Not perfect.
D. From G. Finlayson's Collection during Crawford's Embassy to Siam and Hue.

197. *SCIURUS ASSAMENSIS, McClelland, MS. Catal. of the Zoology of Assam.*

Sciurus assamensis, *Gray, Cat. Mamm. Br. Mus. p.* 143.
Sciurus lokhroides, *List of Mammalia, &c. Pr. Z. Soc.* 1839, *p.* 152.
Sciurus griseiventer, *Is. Geoffr.*

HAB. Assam, *McClelland.* Bootan, *Pemberton.* Nepal, *Hodgson.*

A. McClelland's Collection, Assam.
B. C. Pemberton's Collection, Bootan.
D. Presented by B. H. Hodgson, Esq.

198. *SCIURUS LOKRIAH, Hodgson, Journ. As. Soc. Beng. V. p.* 232.

The Lokriah, *Gray, Cat. Mamm. Br. Mus. p.* 143.

HAB. Nepal, *Hodgson.*

A. B. C. Several Skins, not in good condition, presented by B. H. Hodgson, Esq.

199. *SCIURUS LOKROIDES, Hodgson, Journ. As. Soc. Beng. V. p.* 232.

The grey-thighed Squirrel, *Gray, Cat. Mamm. Br. Mus.* 143.

HAB. Nepal, *Hodgson.*

A. A Skin, presented by B. H. Hodgson, Esq.

Of the four species of *Sciurus* last enumerated, the *Sc. subflaviventris* (McClelland, MS. Cat. of Zool. of Assam), and the *Sc. lokriah* (Hodgson, Journ. As. Soc. Beng. V. 232), and the *Sc. assamensis* (McClel. *l. cit.*), and the *Sc. lokroides* (Hodgson, *l. cit.*), respectively, so nearly resemble each other, that no satisfactory diagnosis can be pointed out. Their geographical distribution appears in some cases slightly to affect their exterior colouring, which, however, does not amount to a specific difference.

200. *SCIURUS TENUIS, Horsfield, Zool. Research. Cantor, Malayan Mamm. p.* 42.

The slender Squirrel, *Gray, Cat. Mamm. Br. Mus. p.* 144.

HAB. Singapore, *Finlayson.*

A. From G. Finlayson's Collection during Crawford's Embassy to Siam and Hue.

201. *SCIURUS ATRODORSALIS*, *Gray, Ann. and Mag. N. H. X.* 1842, *p.* 263.

The blackish-backed Squirrel, *Gray, Cat. Mamm. Br. Mus.* 143.

HAB. Tenasserim Coast, *Dr. Helfer.*

A. Dr. Helfer's Collection in Tenasserim.

202. *SCIURUS HIPPURUS*, *Isid. Geoffr., Guèrin Mag. de Zool.* 1832, *p.* 6.

Sciurus hippurus, *List of Mammalia, &c., collected in Assam by J. McClelland, Esq. Proceed. Zool. Soc.* 1839, *p.* 146. *Schinz, Syn. Mamm. II. p.* 36. *Müller and Schlegel, Verhandl. over Nat. Gesch. p.* 86.

Sciurus caudatus, *McClelland, MS.*

Sciurus exythræus, *Pallas. Gray, Cat. Mamm. Br. Mus. p.* 142.

HAB. Assam, *McClelland.* Malacca, *Griffith.* Sumatra, Assam, and China, *Müller and Schlegel.*

A. B. From the Collections of J. McClelland in Assam.
C. Presented by Wm. Griffith, Esq.

This species is nearly allied to the *Sc. erythræus* of Pallas, but it varies in the depth of the colours both above and underneath. Several varieties are indicated by Mr. Gray in the Catalogue of the British Museum.

203. *SCIURUS FINLAYSONII*, *Horsfield, Zool. Research.*

Ecureuil blanc de Siam, *Buff., H. N. VII. p.* 256.

HAB. Siam.

A. From G. Finlayson's Collection during Crawford's Embassy to Siam and Hue.

204. *SCIURUS BICOLOR, Sparrman, Götheborgska Wet. Samh. Handl.* 1 *st. p.* 70, 1778.

Sciurus bicolor, *Sparrman, l. cit.*

" A. *Varietas indica. Sc.* supra niger, infra fulvus ; auriculis acutis imberbibus ; palmarum ungui pollicari magno rotundato."—(Fischer.)

" B. *Varietas sondaica. Sc.* fuscus, varians a fusco-nigricante ad sordide fulvum, pilis velleris fulvis et canescentibus intermixtis, subtus fulvus vel pallide flavescens."—(Horsfield, Zool. Research.)

The two varieties of this species are enumerated by various synonyms, of which the following deserve attention :—

Sciurus bicolor, *Sparrm., l. cit. Horsf., Zool. Res. Müller and Schlegel, Verhandl. over Nat. Gesch. &c. p.* 86. *Cantor, Cat. Malayan Mamm.*

Sciurus javensis, *Schreber, Sængth. Gray, Cat. Mamm. Br. Mus. p.* 136.

Sciurus madagascariensis, *Shaw, Gen. Zool. II. pt. I. p.* 128.

Sciurus macruroides, *Hodgs.*

Sciurus giganteus, *McClelland, MS. Proceed. Zool. Soc.* 1839, *p.* 150.

Javan Squirrel, *Pennant and Shaw.*

JELARANG, of the Javanese.

CHINGKRÁWHAH ÉTAM, of the Malays, *Cantor.*

HAB. *First Variety.* Assam, *McClelland.* Nepal, *Hodgson.* Malayan Peninsula, *Cantor and Müller.*

Second Variety. Java, *Horsfield.* Java and Sumatra, *Müller and Schlegel.*

A. *Varietas indica.* Siam, Finlayson.

B. *Varietas indica.* Assam, McClelland.

C. D. *Varietas sondaica.* Java, Horsfield.

E. F. G. H. Several prepared Skins.

205. *SCIURUS CANICEPS, Gray, Ann. and Mag. Nat. Hist.* 1842 ; *Catal. Mamm. Br. Mus. p.* 143.

HAB. Bootan, *Pemberton.*

A. B. From Maj. Pemberton's Collection in Bootan.

C. A skin, imperfect.

206. *SCIURUS AFFINIS*, *Raffles, Des. Catal. of a Zool. Collect. from Sumatra, Trans. Linn. Soc. XIII. p.* 259. *Horsf., Zool. Res.*

Sciurus modestus, *Müller.*

Hab. Sumatra, *Raffles. S. modestus,* Sumatra and Borneo, *Müller.*

207. *SCIURUS KERAUDRENII*, *Lesson, Cent. Zool. pl.* 1.

Sciurus Keraudrenii, *Less., loc. cit. Schinz, Syn. Mamm. II. p.* 37. *Blyth, Journ. As. Soc. XVI. p.* 872.
Sciurus ferrugineus, *Cuv. Schinz, loc. cit.*
Sciurus ruberrimus, *Blyth, MS. Mus. Soc. Ind. Or.*

Of this species, which is as yet rare in collections, Mr. Blyth gives the following description :—" Entirely of a deep rufo-ferruginous colour, rather darker above than below, the fur of the upper parts somewhat glistening; toes of all the feet blackish, as in the three preceding, and the extreme tip of the tail yellowish-white."

Hab. Arakan and Pegu, *Blyth, Journ. As. Soc. XVI. pt. II. p.* 872.

A. A single specimen, presented by the Asiatic Society of Bengal, the extremity of the tail of which is not perfect. In other respects it agrees entirely with Mr. Blyth's description above cited.

208. *SCIURUS HYPOLEUCUS*, *Horsfield, Zool. Res.*

Sciurus Leschenaultii, *Desmar. Horsf., Zool. Res. Art.* S. bicolor.

Sciurus hypoleucus, *Müller and Schlegel, Over de Eekhorens* (Sciurus) *van den Indischen Archipel.*

Hab. Sumatra, *Raffles, Müller.*

A. Presented by Sir T. S. Raffles.

209. *SCIURUS MAXIMUS*, *Schreb., Sængth.*

Sciurus purpureus, *Zimm., Zool. Geogr. Quad. p.* 518. *Gray, Cat. Mamm. Brit. Mus. p.* 136.

Bombay Squirrel, *Pennant, Hist. Quad. II. p.* 409.

RASOO and RATUFAR, of the inhabitants of the Monghyr Hills, *Dr. F. B. Hamilton.*

SHEKRA, of the Mahrattas, *Elliot.*

HAB. Peninsula of India, Monghyr Hills, *Hamilton.*

A. From the Collections of Dr. R. Wight of Madras.

B. A Drawing in the Collection of Dr. Francis (Buchanan) Hamilton.

210. *SCIURUS ELPHINSTONII*, *Sykes*, *Proceed. Zool. Soc.* 1831, *p.* 103.

"This very beautiful animal," Colonel Sykes states in his Catalogue of Dukhun Mammalia, "is found only in the lofty and dense woods of the Western Ghauts, and has rarely been seen by Europeans in Dukhun. It is of the size of the *S. maximus*, and the general arrangement of its colours is the same; and as the *S. maximus* passes through some gradations of colour, the *S. Elphinstonii* might be supposed by casual observers to be a variety of that species. I am enabled to state, however, from personal observation, that the latter does not change its colour at any period of its life, specimens being in my possession of the most tender and mature ages.

"Ears, and whole upper surface of the body, half-way down the tail, outside of the hind legs, and half-way down the fore legs outside, of a uniform rich reddish chestnut. The whole under surface of the body, from the chin to the vent, inside of limbs, and lower part of fore legs, crown of the head, cheeks, and lower half of the tail, of a fine reddish white, the two colours being separated by a defined line, and not merging into each other. Feet of a light red. Forehead, and down to the nose, reddish brown, with white hairs intermixed. Irides, nut-brown. Ears tufted. Length of the male in my possession, from the tip of the nose to the insertion of the tail, 20 inches. Length of the tail, 15¼ inches.

"The cry of this animal is 'Chook, chook, chook,' at first uttered slowly, and then rapidly; and it is so loud as to have a startling effect.

"I have dedicated this Squirrel to a very distinguished person, and a zealous promoter of scientific research, the Hon. Mountstuart Elphinstone."

SHEKROO, of the Mahrattas, *Col. Sykes.*

HAB. Dukhun.

A. B. C. Presented by Colonel Sykes.

211. *SCIURUS MACROURUS, Forster.*

Sciurus macrourus, *Forster. Pennant's Indian Zoology, Second edition,* 1790, *p.* 31, *with a figure, pl.* 1. *Linn. Syst. Nat., ed. Gmelin, I. p.* 148. *Blyth, Journ. As. Soc. Beng. XVI. pt. II. p.* 869. *Gray and Hardw., Illustr. Ind. Zool. II. pl. XIX.*

The Long-tailed Squirrel, *Pennant's Indian Zoology, second edition, p.* 81.

HAB. Ceylon and Malabar, *Pennant.* Travancore, *Elliot.*

A. Presented by the Asiatic Society of Bengal.

212. *SCIURUS VULGARIS, Linn., Fn. Suec.* 2, *p.* 15. *Syst. Nat., ed. Gmel. I. p.* 145 ?

? Common Squirrel, *Penn., Brit. Zool. I. p.* 107.

Sciurus europæus, *Gray, Cat. Mamm. Br. Mus. p.* 139. *Cat. Hodgs. Collect. p.* 23.

Mustela ? calotus, *Hodgson, Calc. Journ. Nat. Hist. II. p.* 221, *&c.*

CHÚÁKHÁL, of the inhabitants of Tibet.

HAB. Himalaya and Tibet, *Hodgson.*

A. A furrier's skin, not perfect. Presented by B. H. Hodgson, Esq.

B. H. Hodgson, Esq., who observed this animal in that state only in which it is brought from Tibet as an article of commerce, gives an account of it in the second volume of the Calcutta Journal of Natural History, p. 221, &c. The specimens being all imperfect, he was not able to determine its generic character, and therefore indicates it doubtfully as a species of *Mustela* (?), *M. calotus,* Hodgs. Mr. H. states : " Cloaks lined with furs of various kinds are largely imported from the north by the Nipalese merchants, and amongst the less expensive sorts of these furs so employed that called *Chúákhál* is perhaps the best and handsomest. I have frequently endeavoured to procure all or any of the animals whose skins are thus employed in commerce and in dress, and lately, through the kindness of the minister of this place, have obtained a very beautifully-cured specimen of the animal called *Chúákhál,* which, however, alas ! is stripped of every vestige of bone, and of talons or nails."

" *Mustela ? calotus* of a clear slaty blue, freckled vaguely with hoary ; the amply-tufted ears, the spreading limbs, and the tail, blackish ; the

belly and neck below, pure white. Twelve to fourteen inches long, and four to five high; tail, with the hair, ten to eleven—without it, eight inches."

This animal appears to represent the common Squirrel of northern Europe and Asia in its winter dress.

213. *SCIURUS CHRYSONOTUS, Blyth.*

Sciurus chrysonotus, *Blyth, Journ. As. Soc. Beng. XVI. p.* 873; *X. p.* 920.

HAB. Tenasserim Provinces, *Blyth.*

A. Presented by the Asiatic Society of Bengal.

" Size of *Sc. Rafflesii,* Vig. and Horsf., or measuring about 20 inches, of which the tail is half, its hair reaching 2 in. or 2½ in. further. General colour, grizzled fulvous above; the limbs and tail grizzled ashy (from each hair being annulated with black and pale fulvescent), with an abruptly-defined black tip to the latter; under-parts and inside of limbs pale grizzled ashy. In bright specimens, the nape, shoulders, and upper part of the back, are vivid light ferruginous, or golden fulvous, sometimes continued to the tail, more generally shading off, gradually toward the rump, and in some but slightly developed even upon the nape and shoulders; whiskers long and black, and slight albescent pencils to the ears, more or less developed. Common in the Tenasserim provinces."—(Blyth, *l. cit.*)

214. *SCIURUS CHINENSIS, Gray, Cat. Mamm. Br. Mus. p.* 144.

HAB. China.

A. Presented by John Reeves, Esq.

Genus PTEROMYS, *Cuv., Lec. d'Anat. I.* 1800. *Fischer, Schinz, et al.*

SCIURI spec., *Linn., Pallas, et al.*

† Flying Squirrels with cylindrical tails.

215. *PTEROMYS PETAURISTA, Pallas, Sp.*

Sciurus petaurista, *Pallas, Miscell. p.* 54.
Pteromys petaurista, *Blyth, Journ. As. Beng. XVI. p.* 865.
Pteromys orál, *Tickell, Calc. Journ. Nat. Hist. II. p.* 401.
Taguan, ou grand écureuil volant, *Buff., Hist. Nat. Suppl. III. p.* 150.
ORÁL, of the Coles, *Lieut. Tickell.*

HAB. The Peninsula of India and Ceylon.

A. Presented by the Asiatic Society of Bengal.

B. Presented by John McClelland, Esq.

216. *PTEROMYS NOBILIS*, *Gray Sp.*

Sciuropterus nobilis, *Gray, Ann. and Mag. Nat. Hist. X.* 1842, *p.* 263.

Sciuropterus chrysotrix, *Hodgson, Journ. As. Beng. XIII. p.* 67.

Sciuropterus aurostrigatus, *Hodgson, Zool. Nep. fide Gray, Cat. Mamm. Br. Mus. p.* 134.

Pteromys nobilis, *Blyth, Journ. As. Soc. Beng. XVI. p.* 866.

The Golden-streaked Taguan, *Gray, Cat. Mamm. Br. Mus. p.* 134.

HAB. Nepal. Hills generally, but chiefly the central and northern regions, *Hodgson.* Darjeeling, *Pearson, Blyth.*

A. Presented by J. T. Pearson, Esq.

" Above, intense ochreous chestnut, mixed with black, and divided down the spine by a golden yellow line, and margined externally by the same hue, which also spreads over the shoulders and thighs. Below, and the flying membrane, with the lower limbs and tail, intense orange-red deepening into ochreous on the margin of the membrane, and on the limbs, ophthalmic and mystacial regions, defined by black; chin dark, cheeks mixed, a pale golden spot on the nasal bridge. Two inches of end of tail, black. Ears, outside, concolorous with lower surface. Tail longer than the animal, and cylindric. Pelage thick and soft, and glossy, woolly and hairy piles; average length of latter an inch and one-third. Snout to rump, fifteen inches. Head to occiput (straight), three inches and three-eighths. Tail, seventeen inches and a half; less terminal hair, fifteen inches and a half. Ears, one inch and one-third. Palma, less nails, one inch and seven-eighths. Planta, less nails, two inches and seven-eighths. Sexes alike.

" *Remark.*—In colour much like *Magnificus*, but invariably distinguished by the pale golden line down the spine."—(Hodgson, *l. c.*)

217. *PTEROMYS CANICEPS*, *Gray, Sp.*

Sciuropterus caniceps, *Gray, Ann. Mag. Nat. Hist. X.* 1842, *p.* 262; *Cat. Mamm. Br. Mus. p.* 135.

Sciuropterus senex, *Hodgson, Journ. As. Soc. Beng. XIII. I. p.* 68.

Pteromys caniceps, *Gray, Cat. Hodgs. Coll. p.* 21.

The Grey-headed Taguan, *Gray, loc. cit.*

HAB. Darjeeling, *Pearson. Blyth, J. A. S. B. XVI. p.* 266.

A. Presented by J. T. Pearson, Esq.

" Entire head, pepper and salt mixture, or iron-grey; orbits and base of ears, intense burnt sienna. Entire body above, and the tail and flying membrane, a full clear mixture of golden and black hues. Shoulders not paled. Limbs intense aurantine ochreous. Margin of the parachute albescent, and neck below, the same. Body, below, with parachute there, orange-red. Tip of tail black, as usual. Ears, nearly or quite nude, and tail subdistichous or flatter. Pelage longer, and scarcely so fine as in *Magnificus* and in *Chrysotrix*. Longest piles an inch and three-quarters, and less glossy. Snout to rump, fourteen inches. Head, two inches and seven-eighths. Ears one inch and a quarter. Tail only fifteen inches; with hair, sixteen inches and a half. Palma, one inch and eleven-sixteenths. Planta, two inches and a half."—(Journ. As. Soc. Beng. XIII. pt. I. p. 68.)

The descriptions of this and the preceding species, accompanied by coloured drawings, were communicated to the Asiatic Society of Bengal in July, 1842, but as some delay occurred in the publication, both the names and first indications of Mr. Hodgson were anticipated in the " Annals and Magazine of Nat. Hist." X. p. 263.

218. *PTEROMYS MAGNIFICUS, Hodgson, Sp.*

Sciuropterus magnificus, *Hodgson, Journ. As. Soc. Beng. V. p.* 231.

Pteromys magnificus, *Gray, Cat. Mamm. Br. Mus. p.* 134; *Cat. Hodgs. Collect. p.* 22. *Blyth, Journ. As. Soc. XVI. p.* 866.

The Koiral, *Gray, Cat. Mamm. Br. Mus. p.* 134.

HAB. Nepal, *Hodgson.* Assam, *Blyth.*

A. Presented by B. H. Hodgson, Esq.

" Above, intense chestnut, below and the shoulders golden red; tail, paler than the body above, and tipped black; a black zone round the eyes, and another embracing the mustachios; chin, pale, with a black triangular spot. Nude parts of skin, fleshy-white. Tail, cylindrico-

depressed, and considerably longer than the animal. Parachute, large. Length of the animal, 16 inches; of the tail, 22. Weight, 3¼ lbs.

219. *PTEROMYS MELANOTIS*, *Gray, Mag. Nat. Hist. New Series, I. p.* 584.

Pteromys melanotis, *Blyth, Journ. As. Soc. Beng. XVI. p.* 866, *note.*

Black-eared Taguan, *Gray, Cat. Mamm. Br. Mus. p.* 134.

HAB. Siam, *Finlayson.*

A. B. From Surgeon G. Finlayson's Collection during the Mission of J. Crawfurd, Esq., to Siam.

220. *PTEROMYS NITIDUS*, *Geoffr.*

Pteromys nitidus, *Geoffr. Schlegel en Müller, Over de Vliegende Eekhorens. Verhandl. Nat. Gesch. p.* 104.

The bright bay Taguan, *Gray, Cat. Mamm. Br. Mus. p.* 134.

BIELOCK and BOLOCK, of the Sundanese, *Müller and Schlegel.*

HAB. Java, *Horsfield.* Java, Sumatra, Borneo, *Müller.*

A. Horsfield's Collection from Java.
Several prepared skins.

221. *PTEROMYS ALBIVENTER*, *Gray, Mag. Nat. Hist. I. New Series, p.* 584.

The Grey-cheeked Taguan, *Gray, Cat. Mamm. Br. Mus. p.* 134. *Gray and Hardw., Illust. Ind. Zool. II. figured on pl.* 18.

HAB. Nepal, *Hodgson.* Afghanistan, *Griffith.*

A. From Griffith's Collection in Afghanistan. A prepared skin.

222. *PTEROMYS PEARSONII*, *Gray, Ann. and Mag. Nat. Hist. X.* 1842, *p.* 262.

HAB. Darjeeling, *Pearson.*

A. Presented by J. T. Pearson, Esq.

Briefly described by Mr. Gray in the volume of I. N. Hist. above

cited. It resembles the *Pt. Horsfieldii* of Waterhouse, described in Proceed. Zool. Soc. 1837, p. 87, but is much smaller.

Genus Sciuropterus, *Fr. Cuv., Dents d. Mamm.* 1825. *Gray, Blyth, et al.*

Sciuri Species, *Linn. et al.*

†† Flying Squirrels, with flat or distichous tails.

223. *SCIUROPTERUS ALBONIGER*, *Hodgson, Journ. As. Soc. Beng. V.* 231.

Sciuropterus Turnbullii, *Gray, Mag. Nat. Hist. New Series, I. p.* 584; *Proceed. Zool. Soc.* 1837, *p.* 68; *Cat. Mamm. Br. Mus. p.* 135; *Cat. Hodgson's Collect. p.* 22.

Hab. Nepal, *Hodgson.* Bootan, Sikim; common at Darjeeling, *Blyth, J. A. S. B. XVI. p.* 866.

A. Presented by J. T. Pearson, Esq.

B. Presented by B. H. Hodgson, Esq.

224. *SCIUROPTERUS GENIBARBIS*, *Horsfield, Sp. Cantor, Catal. Mal. Mamm. p.* 45.

Pteromys genibarbis, *Horsfield, Zool. Research.*

Sciuropterus (Pteromys) sagitta, *Schlegel and Müller, Vliegende Eekhorens. Verhandl. over Nat. Gesch. p.* 109.

Kechubu, of the Javanese.

Hab. Java, *Horsfield.* Malayan Peninsula, *Cantor.*

A. Horsfield's Collection from Java.

225. *SCIUROPTERUS LEPIDUS*, *Horsfield, Sp.*

Hab. Java.

A. Horsfield's Collection from Java.

226. *SCIUROPTERUS FIMBRIATUS*, *Gray, Mag. Nat. Hist. New Series, I. p.* 584; *Proceed. Zool. Soc.* 1837, *p.* 67; *Cat. Mamm. Br. Mus. p.* 135. *Blyth, Journ. As. Soc. Beng. XVI. p.* 584.

? Pteromys Leachii, *Gray, Mag. Nat. Hist. N. S. I. p.* 584.

HAB. North-west Himalaya, *Blyth.*

A. Griffith's Collection, *Young.*

Mr. Gray thus describes this species:—"Fur long, soft, grey, varied with black; hairs lead-coloured above, flattened, pale brown, with a black tip. Face whitish; orbits black; whiskers very long, black; chin and beneath, white. Tail broad, rather tapering, fulvous, with black tips to the hairs at the base, black at the end. The feet broad; front thumb rudimentary. The outer edge of the hind feet with a broad tuft of hair; the soles of the hind feet with a small oblong tubercle on the middle of the outer side, a tubercle in front, and with two unequal ones on the hinder part of the inner side."

In the sixteenth volume of the Journ. As. Soc. Beng. p. 866, in his remarks on the Indian Sciuri, Mr. E. Blyth states that two specimens, one from Simla, are contained in the Museum of that Society.

Genus ARCTOMYS, *Schreb. et al.*

MURI Species, *Linn. et al.*

227. *ARCTOMYS BOBAC*, *Schreb.*, *Sængth. p.* 738.

Arctomys himalayanus, *Hodgson, Journ. As. Soc. Beng. X. p. 777, with a figure. XII. p.* 409 (potiùs Tibetanus hodie).

Arctomys caudatus, *Jacquemont, Voy. dans l'Inde, tome* 4*me*, *Zool. p.* 66.

HAB. Tibet, *Capt. R. Strachey.* Tibet and the Himalayan Slopes, *Hodgson.*

A. B. Adult. From Capt. R. Strachey's Collection.

C. Young.

D. and E. Two flat Skins, not in good condition. Presented by B. H. Hodgson, Esq.

F. A Skin, imperfect. Presented by the Asiatic Society of Bengal.

In the twelfth volume of the Journ. As. Soc. Beng., B. H. Hodgson, Esq., gives a notice of two Marmots inhabiting, respectively, the plains of Tibet and the Himalayan slopes near the snows: 1. *A. tibetanus;* 2. *A. himalayanus;* with copious details of their structure and habits.

Fam. 5. ASPALACIDÆ, *Gray, Cat. Mamm. Br. Mus. Syst. List, XXV.*

Genus Rhizomys, *Gray, Proceed. Zool. Soc.* 1831, *p.* 95.

228. *RHIZOMYS MINOR*, *Gray, Ann. and Mag. Nat. Hist. X. p.* 266.

? Rhizomys badius, *Gray, Cat. Mamm. Br. Mus. p.* 150; *Cat. Hodgs. Coll. p.* 24.

Thúr, of the Siamese, *Finlayson.*

Hab. Siam, *Finlayson.*

A. From Surgeon G. Finlayson's Collection during the mission of J. Crawfurd, Esq., to Siam.

B. A Drawing from the same Collection.

Mr. G. Finlayson's Zoological Journal gives the following details:— "Our specimen is about 6 inches in length, and appears to be a young one. It readily submits to confinement, and is easily tamed. Like most animals of the genus, it is destructive to furniture, to grain, &c., and when suddenly surprised he throws himself upon the offensive, instead of making a precipitate retreat. His principal food is unhusked rice or other grain, and he is fond of yams, pumpkins, &c., found in forests and woods near to Bamvasor."

229. *RHIZOMYS BADIUS*, *Hodgson, Calcutta Journ. Nat. Hist. II. p.* 60.

Rhizomys badius, *Gray, Cat. Mamm. Br. Mus. p.* 150; *Cat. Hodgs. Coll. p.* 24.

Hab. Nepal and Sikim, *Hodgson.*

A. A specimen from Sikim. Presented by B. H. Hodgson, Esq.

Further observations and comparisons of specimens from different localities are required to determine whether *Rh. minor* and *Rh. badius* are specifically distinct. As here enumerated, they differ in colour, relative size, and geographical distribution. The *Rh. minor* was collected in Siam, is uniformly brown, with a slight deep chestnut reflection, and is six and a half inches long; the *Rh. badius* inhabits Nepal and Sikim, measures nine inches in length, and the bay or chestnut colour predominates in the upper parts, while the abdomen is gray.

Order V. UNGULATA.

Fam. 1. BOVIDÆ, *Gray, Cat. Mamm. Br. Mus. Syst. List, XXVI.*

ANTELOPES, *Gray, Knowsley Menagerie, p.* 1.

Genus KEMAS, *Ham. Smith.*

PANTHOLOPS, *Hodgson.*

ANTILOPE, *Abel.*

230. *KEMAS HODGSONI, Abel, Sp.*

Kemas Hodgsoni, *Gray, Cat. Mamm. Br. Mus. p.* 157.
Pantholops Hodgsoni, *Hodgs., Journ. As. Soc. Beng. XI. p.* 282.

CHIRU, Tibetan, *Hodgson.* Isos, Tibetan, *Strachey.*

HAB. Open plains of Central and Eastern Tibet, *Hodgson* and *Strachey.* Found by Capt. R. Strachey at an elevation of 15,000 feet.

A. A specimen set up from Capt. R. Strachey's Collection.

B. Horns. Presented by Dr. N. Wallich.

Genus GAZELLA, *De Blainv., Bull. Soc. Phil.* 1816.

ANTILOPE, *Sykes et al.*

231. *GAZELLA BENNETTII, Sykes, Sp.*

Antilope Bennettii, *Sykes, Catal. Dukhun Mamm. p.* 12; *Proceed. Zool. Soc.* 1831, *p.* 104.

KALSEEPEE, or Black Tail, of the Mahrattas, *Sykes.*
Goat-Antelope, of Europeans, *Sykes.*

HAB. Dukhun, *Sykes.* Madras, *Elliot.* Nepal, *Hodgson.*

A. B. Male and female. Presented by Colonel Sykes.

232. *GAZELLA CORA, Ham. Smith, Sp.*

Antilope cora, *Ham. Smith. Griffith, A. K. V.* 338.

HAB. Abyssinia, *Sir W. Harris.* Eastern Africa and the shores of the Red Sea, *Ham. Smith.*

A. B. Skull and horns. From Sir W. Harris's Collection in Abyssinia.

Genus CERVICAPRA, *De Blainv., Bull. Soc. Phil.* 1816.

CAPRA, *Linn.*
ANTILOPE, *Pallas.*

233. *CERVICAPRA BEZOARTICA*, *Aldrov, Sp.*

Antilope cervicapra, *Pallas, Misc. Zool. p.* 9. *Elliot, Mamm. South Mahratta, &c.*
CHIGRI, Canarese, *Elliot.*
MRIGA, Sansk., *Elliot.*
HURU, Mahratta and Dekhani, *Elliot.*
BAHMUNNEE HURU, of the Mahrattas, *Sykes.*
Common Antelope, *Pennant.*

HAB. Dukhun, *Sykes.* Madras, *Elliot.* Nepal, *Hodgson.* Northern Africa, *Pennant.*

A. Presented by Colonel Sykes.
B. Presented by the Asiatic Society of Bengal.
C. Horns. Presented by Gen. T. Hardwicke.
D. Horns. Presented by B. H. Hodgson, Esq.

Genus TETRACERUS, *Ham. Smith, An. Kingd.* 1827.

ANTILOPE, *De Blainv., Hardw., et al.*

234. *TETRACERUS QUADRICORNIS*, *De Blainv., Sp.*

Antilope quadricornis, *De Blainv., Journ. Phys.* 1818.
Antilope Chickara, *Hardw., Trans. Linn. Soc. XIV. p.* 520.
CHOUKA, or CHOUSINGA, *Hodgson, Journ. As. Soc. Beng. V. p.* 242. (The name *Chikara*, used by Hardwicke, belongs, according to Hodgson, to another species, *A. subulata, Hodgs. ?*)

HAB. Western Provinces of Bengal, *Hardwicke.* Nepal and Himalaya, *Hodgson.*

A. From Capt. R. Strachey's Collection, Ladakh.

Genus MADOQUA, *Ogilby, Proceed. Zool. Soc.* 1836, *p.* 137.

NEOTRAGUS, *Ham. Smith.*

235. *MADOQUA SALTIANA*, *De Blainv., Sp.*

Antilope saltiana, *De Blainv., Bull. Sc.* 1816.
The Madoqua.

HAB. Abyssinia.

A. B. Male and Female, Sir W. C. Harris's Collection

Genus ORYX, *Ham. Smith.*

ANTILOPE, *Pallas et al.*

236. *ORYX LEUCORYX*, *Pallas, Sp.*

Antilope leucoryx, *Pallas.*
The Oryx.

HAB. North and Western Africa, Abyssinia, *Harris.*

A. Skull and Horns from Sir W. C. Harris's Collection.

Genus CAPRICORNIS, *Ogilby, Proceed. Zool. Soc.* 1836, *p.* 139.

ANTILOPE, *Hodgson.*
NEMORHEDUS (*part. H. Smith*).

237. *CAPRICORNIS BUBALINA*, *Hodgson, Sp.*

Antilope bubalina, *Hodgs., Proceed. Zool. Soc.* 1832, *p.* 12.
Nemorhedus proclivus, *Hodgs., Journ. As. Soc. Beng. X. p.* 913; *Classif. Cat.*
The THÁR, of the Nepalese.

HAB. Nepal, *Hodgson.*

A. Presented by B. H. Hodgson, Esq.
B. Horns, *idem.*

Genus NEMORHEDUS, *Ham. Smith, part.*

KEMAS, *Hodgson, Ogilby.*
ANTILOPE, *Hardwicke.*

238. *NEMORHEDUS GORAL*, *Hardwicke, Sp.*

Antilope goral, *Hardw., Trans. Linn. Soc. XIV. p.* 518, *tab.* 14.
Kemas goral, *Hodgson, Journ. As. Soc. Beng. X. p.* 913; *Classif. Catal.*
The GORAL, of the Nepalese.

HAB. Nepal and Himalaya, *Hardwicke.*

A. Presented by B. H. Hodgson, Esq.
B. C. Horns, *idem.*

Genus Bosephalus, *Ham. Smith.*

Acronotus, *Ham. Smith.*

239. *BOSEPHALUS CAAMA*, *Cuv. Sp.*, *Règne Animal*, *2nd ed. p.* 269.

Antilope caama, *Cuv. l. cit.*
Acronota caama, *Ham. Smith, G. A. K.*
Le Caama, *Cuvier.*

Hab. Southern Africa.

A. Horns, presented by General T. Hardwicke.

Genus Procapra, *Hodgson, Journ. As. Soc. Beng. XV. p.* 334.

240. *PROCAPRA PICTICAUDA*, *Hodgson.*

Rágóá and Góá, of the Tibetans, *Hodgson.*

Hab. Tibet. Observed in Ladak by *Capt. R. Strachey.*

A. From Capt. R. Strachey's Collection.

In the Journal of the Asiatic Society above cited, Mr. Hodgson gives the following specific character of this new species of Antelope : " Goat antelope, with medial elliptic black horns, inserted between the orbits, and directed upwards and backwards with a bold curve and slight divergency ; the tips being again recurved forwards, but not inwards, annulated nearly to the tips : the rings being complete, separate, and 25 to 27 in number ; short, deep head, finely attenuated ; large eyes ; long, pointed and striated ears : very short, depressed, triangular tail ; and long delicate limbs. Pelage consisting of hair only, of medial uniform length and fineness, varying with the seasons like the colour. Above sordid brown (' in summer ;' ' in winter, canescent slaty, smeared on the pale surface with fawn. Internally, the hairs slaty-blue '), tipt with pale rufous ; below, with the lining of the ears, the entire limbs almost, and a small caudal disc, rufescent-white : no marks whatever ; no tufts to knees ; tail, black. Length, from nose to anus, about three and a half feet. Height about two feet. Horns, along the curve, thirteen inches ; straight, eleven inches. Habitat, the plains of Tibet, amid ravines and low bare hills : not gregarious."—(Hodgson, J. A. S. B. *loc. cit.*)

The STREPSICERES, *Gray, Knowsley Menagerie, p.* 26.

Genus Strepsiceros, *Ham. Smith. Griffith, An. King.* 1827.

Antilope, *Pallas et al.*

241. *STREPSICEROS KUDU*, *Ham. Smith.*

Antilope strepsiceros, *Pallas, Misc. p.* 9.

The Kudu.

Hab. Abyssinia, *Harris.* Southern Africa.

A. From Sir W. C. Harris's Collection in Abyssinia.

B. Horns from the Cape of Good Hope. Presented by General T. Hardwicke.

Genus Portax, *Ham. Smith. Griffith, An. King.* 1827.

Antilope, *Pallas et al.*

Damalis (Portax), *Ham. Smith, l. cit.*

242. *PORTAX PICTA*, *Pallas, Sp., Spic. Zool. XII. p.* 14.

Antilope picta, *Pallas, l. cit. Sykes, Catal. Dukhun Mamm. p.* 13.

Damalis (portax) Risia, *Ham. Smith.*

Nylghau, of the Persians, *Sykes.*

Rooee and Ruhi, of the Mahrattas, *Sykes and Elliot.*

Hab. Peninsula of India, Dukhun, *Sykes.* Southern Mahratta Country, *Elliot.*

A. Presented by Colonel Sykes.

The GOATS, *Gray, Knowsley Menagerie, p.* 31.

Genus Capra, *Linn., Ham. Smith, et al.*

Hemitragus, *Hodgson et al.*

243. *CAPRA JEMLAICA*, *Ham. Smith. Griffith, An. Kingd. IV. t.* 194; *V.* 358. *Gray, Cat. Mamm. Br. Mus. p.* 168; *Cat. Hodgs. Coll. p.* 28.

Hemitragus quadrimammis, *Hodgs. Journ. As. Soc. Beng. V. p.* 254.

The Jharal, Ther, or Tehr, of the Nepalese, *Hodgson.*

The Ther, of Simla, Krás, of Kashmir, *Vigne, Travels.*

Hab. Nepal, *Hodgson.*

A. Presented by B. H. Hodgson, Esq.

B. A prepared Skin, from Capt. R. Strachey's Collection.

C. D. Horns, presented by B. H. Hodgson, Esq.

244. *CAPRA-IBEX-HIMALAYANA*, *Blyth, Proceed. Zool. Soc.* 1840, *p.* 81.

Himalayan Ibex, or Skeen, *Hutton, Calc. Journ. Nat. Hist. II. p.* 542.

SKEEN, of the Himalayan range: written variously, SKYN, SAKEEN, or SIKEEN, in different parts of the range.

KYL, in Kashmir, *Vigne.*

SKIN, the male, L' DAMUO, the female, in Ladakh, *Moorcroft.*

HAB. Ladakh, *Strachey and Moorcroft.* Kashmir, *Vigne.*

A. B. From Captain R. Strachey's Collection in Ladakh.

245. *CAPRA MEGACEROS*, *Hutton, Calc. Journ. Nat. Hist. II.* 535, *pl. XX.*

Capra Falconeri, *Hügel. Dr. A. Wagner, Beiträge zur Sængthier-fauna von Kashmir. Hügel's Kaschmir, IV. p.* 549. *Schinz, Synops. Mamm. II. p.* 463.

MARKHORE, or MARKHUR, the Snake-eater, of the Afghans, *Hutton and Hügel.*

HAB. The mountain districts of Afghanistan, *Hutton.* The highest parts of the Tibetan Himalayas, *Hügel.*

A. Horns, presented by Dr. H. Falconer.

Both MM. Hutton and Wagner, in the works above referred to, give detailed remarks on the peculiarities of the Markhore, or Snake-eater.

Mr. J. E. Gray (Knowsley Menagerie, p. 34) enumerates it as a variety of *Capra Hircus* of authors.

CAPRA HIRCUS, *Linn. Syst. Nat. XII. I. p.* 94.

246. (Var. A.) *CAPRA ÆGAGRUS COSSIA*, *Dr. F.* (*Buch.*) *Hamilton, Icon. Mus. Soc. Ind. Or.*

Capra Æg. Cossus, *De Blainv.*

Capra Hircus, var. the Cossia, *Gray, Knowsley Menag. p.* 34.

HAB. The Cossia or Kassia Mountains, to the east of Silhet, *Hamilton.*

A. A Drawing in Dr. F. (Buchanan) Hamilton's Collection.

" These Goats are found in the highest Cossea mountains; where

they are bred by the middling and lower classes of people. The milk is given to the kids, and those which are not required for keeping up the breed, are fattened for eating.

"The colour of the males is white, with the nose, and space about the eyes, flesh-coloured. A few are said to be blackish, and some have been seen of a tan-colour. The horns and hoofs are whitish. From the nose to the rump they measure about four feet, and at the shoulders are about one foot eleven inches high. The hair is coarse, straight; and everywhere, but on part of the face, on the ears, and legs, is long and pendulous, and has no wool mixed with it, by which this species is easily distinguished from the Shawl-goat. The hair on the under part of the neck is very long. The horns, at their base, occupy the whole space between the ears, and their two inner edges are contiguous; they are flattened and two-edged, but the inner edge is sharper, while the outer is rounded. The flat side, that is turned forwards, is bounded inwards by an elevated ridge, and marked by transverse wrinkles. An elevated ridge runs obliquely over it from the outer angle at the base to the inner edge near the tip. The horns are about the length of the head, and are either placed nearly in the plane of the face, or bend back somewhat from that direction: they diverge considerably outwards, and end in sharp points. The ears spread, are about half the length of the horns, and are covered with short hair, which is the case with the legs below the hock joints. The hoofs are short and blunt. The tail is small and short."—(Dr. F. (Buchanan) Hamilton's MS.)

247. (Var. B.) *CAPRA ÆGAGRUS CHANGRA, Dr. F. (Buchanan) Hamilton, Icon. Mus. Soc. Ind. Or.*

Capra Æg. lanigera, Bouc de Cachemire, C. Hircus, var. D, *Desm. Mamm. p.* 483.

Shawl-Goat, or Changra, *Gray, Knowsley Menagerie, p.* 34.

SHAWL-GOAT, of the English, *Hamilton, l. cit.*

CAMJOO, of Tibet, *Hamilton.*

CHANGRA, of the Parbutties, *Hamilton.*

CHOLAY, of the Nawars, *Hamilton.*

HAB. Tibet, *Dr. F. (B.) H.*

A. A Drawing in Dr. F. (Buchanan) Hamilton's Collection.

"This animal is domesticated in Tibet, and the wool is exported to Cashmire, where it is manufactured into various cloths and felts, of which the finest are in Europe known by the name of Shawl. For

eating, a great many castrated goats of this kind are annually brought to Nepaul. In their manners, these entirely resemble the common goat, and thrive best in a very cold climate.

The Changras are about the size of the goat that is common in the north of Europe, and to this kind they have a strong resemblance. The greater number are black, with various admixtures of white and brown. The hair on the body, neck, and upper part of the head, is remarkably long, especially that which proceeds from above the whole length of the spine. It is pendulous, straight, and rather harsh. Intermixed with this, is a short wool, that is remarkably fine and soft, and this is the only part used in manufactures. The hair on the legs and face is rather short, and is not mixed with wool. The ears are very short. The nose is straight. The horns are longer than the head, much compressed, with the inner edge the sharpest. At the base they approach, and towards the summit they diverge; but, on the whole, they have a twist round, are nearly straight, and stand in the plane of the forehead. The irides are yellow, with an oblong pupil. The tail is short."—(Dr. F. (Buchanan) Hamilton's MS.)

248. (Var. C.) *CAPRA IMBERBIS BERBURA*, *Dr. F. (Buchanan) Hamilton's Icon. Mus. Soc. Ind. Or.*

The Berbura, *Gray, Knowsley Menagerie, p.* 35.

HAB. Upper India, westward of the Jumna.

A. A Drawing in Dr. F. (Buchanan) Hamilton's Collection.

" This variety of goat differs considerably from all others that I have seen. By the natives, the male is called Berbura, the female Berburi. The Bengalese call this goat Ram Sagul.

" The horns of the male approach at the base, but do not reach near the ears. They incline a little back from the plane of the face, and spread out laterally towards the point. They are much compressed at the root, convex before, and concave behind; but, having a spiral turn, the situation of the sides in different parts varies; they have no very remarkable wrinkles. The ears are short. The forehead is prominent, and covered with longish hair. There is no beard, but the male has a very deep dewlap, especially under the throat. The body is formed very much like that of the Maycay, or long-legged goat of Mysore. The hair is harsh; but in general forms a smooth coat. An erect mane, however, extends almost the whole length of the spine, and the

hair on the fore-part of the hind thighs is long. The male is very remarkable by having the scrotum externally separated into two distinct bags. The length from the nose to the horns is nine inches, and from the horns to the tail three feet four inches. The height at the shoulder is two feet nine inches. The circumference of the chest is three feet one inch.

"The female wants the long hair on the spine and thighs, and the dewlap. She is distinguished from the common Indian she-goat by the length of her legs, and the want of a beard; and from the Maycay of Mysore by the shortness of her ears. From the nose to the root of the horns is seven and a half inches; from the horns to the rump is three feet three inches. The height at the shoulder is two feet. The circumference of the chest is two feet four inches. Both sexes are of a fine white colour, variegated with black and reddish-brown. Their manners entirely resemble those of the long-legged goat of the south of India."—(Dr. F. (Buchanan) Hamilton's MS.)

249. (Var. D.) *TIBETAN GOAT.*

HAB. Ladakh, *Capt. R. Strachey;* at an elevation from 11,000 to 15,000 feet.

A. From Capt. R. Strachey's Collection.

Pure white, with a few leaden-coloured patches along the back, and at the sides of the head. Horns about ten inches long, black, approximated at the base, then rising obliquely with an inclination backwards, diverging towards the tips; they are longitudinally marked with an irregular depression, and have a slight spiral twist in the middle; the edges are slightly rounded, equal on both sides, and they are transversely grooved along the entire length. Tail short, with a terminal tuft. Beard moderate. Ears very short, scarcely two inches long, and concealed. Hair very long, straight, soft to the touch, but without wool at the base, more lengthened and pendulous near the exterior of both extremities.

Length, from the tip of the nose to the root of the tail, three feet four inches. Height twenty-two inches.

250. (Var. E.) *TIBETAN GOAT.*

HAB. Ladakh, *Capt. R. Strachey;* inhabits the same locality as the preceding.

A. From Capt. R. Strachey's Collection.

Anterior parts, including the head, neck, shoulders, and sides of the

breast, black, mottled with grey, separated from the body and extremities, which are pure white, by a regularly-defined limit; head rather darker, with a lateral white streak from the region of the eyes to the nose. Horns reflected back to the shoulders in an arch, slightly diverging about the middle, and inclining inwards at the tips; the lower edge semi-cylindrical and rounded, the upper compressed, divided by a longitudinal line, and transversely grooved, each branch having a notch near the end, from which it is attenuated to the point. Hair along the body and rump long, straight, and pendulous, soft to the touch, but without wool; near the shoulders the hair is short. Ears long, erect, sharp. Beard moderate. Length, four feet five inches. Height, two feet six inches.

The SHEEP, *Gray, Knowsley Menagerie, p.* 36.

Genus Ovis, *Linn.*

Capra, *Linn. et al.*

Ægoceros, *Pallas.*

251. *OVIS ARIES, Linn.*

a. Variety of the Domestic Sheep of Nepal.

A. A Skull. Presented by B. H. Hodgson, Esq.

b. Variety of the Domestic Sheep of Tibet.

A. A specimen from Capt. R. Strachey's Collection in Ladakh.

c. Variety of the Domestic Sheep of Tibet.

A. A specimen from Capt. R. Strachey's Collection in Ladakh.

252. *OVIS VIGNEI, Blyth, Proceed. Zool. Soc.* 1840, *p.* 70; *Ann. and Mag. Nat. Hist. VII. p.* 251, *with figure of the Horns, pl. V.*

Ovis cycloceros, *Hutton, Calc. Journ. Nat. Hist. II. p.* 514, *with an outline sketch, pl. XIX. Journ. As. Soc. Beng. XV. p.* 152.

The Sha, of Tibet and Ladak, *Strachey, Blyth.*

Koh-i-Doomba, of the Afghans, *Hutton.*

Hab. Tibet, Ladakh, *Strachey.* Afghanistan, *Griffith, Hutton.*

A. A specimen, adult, from Capt. Strachey's Collection.

B. Young, from Griffith's Collection.

C. Horns on Skull, from Griffith's Collection in Afghanistan.

253. *OVIS AMMON, Linn, Sp.*

Capra Ammon, *Linn., Syst. Nat. XII. I. p.* 97.

Ovis Ammon, *Exxl., Syst. p.* 250. *Blyth, Proceed. Zool. Soc.* 1840, 77.

Ægoceros Argali, *Pall., Zoogr. Rosso-As. I. p.* 224.

Ovis Argali, *Knowsley Menagerie, p.* 37.

Wild Siberian Sheep, *Pennant, Quadr. I.* 38.

" G Nyan," of the Tibetans, *Strachey.*

Hab. Tibet, *Strachey, Hodgson.* Siberia and Northern Asia, *Pallas.*

A. B. Males, adult, from Capt. R. Strachey's Collection in Ladakh.

C. Female, from the same.

254. *OVIS POLII, Blyth, Proceed. Zool. Soc.* 1840, *p.* 62.

Ovis Polii (olim O. sculptorum), *Blyth, Ann. and Mag. of Nat. Hist. VII. p.* 195, *with a figure of the horns, pl. V.* 1, 2, 3, 4.

Rass or Roosh, *Blyth.*

Rass, of the Kirgizzes, and Kooshgar, of the natives of the low countries, *Burnes's Bokhara, &c. II. p.* 208.

Hab. Plains of Pamir, eastward of Bokhara, 16,000 feet above the sea level, *Marsden's Marco Polo, Burnes.*

A. Horns, presented by the Asiatic Society of Bengal.

Genus Pseudois, *Hodgson, Journ. As. Soc. Beng. XVI. p.* 702.

Ovis, *Hodgson, Blyth, et al.*

255. *PSEUDOIS NĀHŎŎR, Hodgson, Sp. Gray, Knowsley Men. p.* 40.

Ovis Nahoor, *Hodgs., Journ. As. Soc. Beng. IV. p.* 492. *Blyth, Proceed. Zool. Soc.* 1840, *p.* 66.

? Ovis Burrhel, *Blyth, Proceed. Zool. Soc.* 1840, *p.* 67; *Ann. and Mag. Nat. Hist. VII. p.* 248, *with figures of* O. Nahoor *and* Ovis Burrhel, *as distinguished by Mr. Blyth, pl. V. fig.* 6, 7.

Nahoor, *Hodgson, Journ. As. Soc. Beng. IV. p.* 492.

" Sn'a," Tibet, *Capt. R. Strachey.*

BURRHAL, of Kumaon and Upper Himalaya, 12,000 to 18,000 feet above the sea-level, *Capt. R. Strachey.*

The NAHOOR, or NERVATI, and SNÀ (not Sha), of Tibet, *Blyth, Proceed. Zool. Soc.* 1840, *p.* 66.

HAB. Kumaon, Upper Himalayas, and Tibet, *Strachey.*

A. A male. B. Female. From Capt. R. Strachey's Collection in Ladakh and Kumaon.

C. Skull and Horns. D. Horns. E. Horns. Presented by the Asiatic Society of Bengal.

There are two varieties of this species, the horns of which are figured in the Ann. and Mag. of Nat. Hist. Vol. VII. pl. V., to one of which Mr. E. Blyth applies the name of *Ovis Nahoor,* to the other that of *Ovis Burrhel* (see Proceed. Zool. Soc. 1840, pp. 66 and 67); and it remains to be determined whether these varieties are respectively entitled to a specific rank. In his remarks on some mammals of Tibet (Journ. As. Soc. XI. p. 283), Mr. Hodgson states: "Mr. Blyth's Ovis Burrhel is no other than my Nāhŏŏr."

The MUSKS, *Gray, Knowsley Menagerie, p.* 41.

Genus MOSCHUS, *Linn., Pallas, et al.*

256. *MOSCHUS MOSCHIFERUS, Linn., Syst. Nat. XII. I. p.* 91.

Moschus saturatus, *Hodgson, Journ. As. Soc. Beng. X.* 914. *Gray, Cat. Mamm. Br. Mus. p.* 172.

GAN POHOO, Assamese, *H. Walker, Esq., Cat. Mamm. of Assam, Calc. Journ. Nat. Hist. III. p.* 267.

The Musk.

HAB. Northern India and Tibet, *Hodgson.* Bootan, *Pemberton.* Assam, *Walker.*

A. From Major Pemberton's Collection in Bootan.

257. *MOSCHUS LEUCOGASTER, Hodgson, Journ. As. Soc. Beng. VIII. p.* 202.

HAB. Tibetan Slopes of the Himalayas, *Hodgson.* Ladakh, *Strachey.*

A. Capt. R. Strachey's Collection in Ladakh.

Genus MEMINNA, *Gray, Ann. of Phil.* 1825.

MOSCHUS, *Erxl., Fischer, et al.*

258. *MEMINNA INDICA*, *Gray.*

Moschus Meminna, *Erxl., Syst.* 322. *Sykes, Proceed. Zool. Soc.* 1831, *p.* 104.

Indian Musk, *Pennant, Quad. I.* 127.

PEESOREH and PISURI, of the Mahrattas, *Sykes and Elliot.*

HAB. Dukhun, *Sykes.* Forests of India in all parts, *Hodgson.*

A. Presented by Colonel Sykes.

B. Presented by General T. Hardwicke.

Genus TRAGULUS, *Brisson, Gray, et al.*

MOSCHUS, *Linn., Pallas, Fischer, et al.*

259. *TRAGULUS JAVANICUS*, *Pallas, Sp.*

Moschus javanicus, *Pall., Spic. Zool. XII.* 18. *Linn. Syst. Nat. ed. Gmel. I. p.* 174. *Müller, Over de Zoogd. v. d. Ind. Archip. Tafel.*

Moschus Kanchil, *Raffles, Trans. Linn. Soc. XIII. p.* 262.

KANCHIL, of the Javanese.

HAB. Java, *Horsfield, Müller.*

A. Horsfield's Collection from Java.

THE OXEN, *Gray, Knowsley Menagerie, p.* 44.

Genus BUBALUS, *Ham. Smith, Griff., An. Kingd.* 1827. *Hodgson et al.*

BOVIS Species, *Linn. et al.*

260. *BUBALUS BUFFELUS*, *Blumenb., Sp. Gray, Cat. Mamm. Br. Mus.* 152.

Bos Bubalus, *Brisson, Schlegel, and Müller, var. Sondaica.*

Bos Buffelus, *Blumenb., Handb.* 10, *p.* 121.

BHAINSA, Continental India, *Hodgson.*

The KARBO, or KARBOU, of the Malays.

MOONDING, of the Sundanese.

The Buffalo.

HAB. Tibet. Domesticated in India, Indian Archipelago, and Southern Europe.

A. Horns of the Bengal Buffalo. Presented by General T. Hardwicke.

B. C. Horns of the Malayan Buffalo. Presented by General T. Hardwicke.

261. *BUBALUS ARNA*, *Hodgson, Journ. As. Soc. Beng. XVI. pt. II. p.* 709.

Bos Arnee, *Shaw, Zool. II. pl.* 11, *p.* 400.

The ARNA, and ARNEE, or URNEE, of the Bengalese.

A. Skull and horns, presented by William Stanley Clarke, Esq.

B. C. Skull and horns, presented by B. H. Hodgson, Esq.

D. Skull and horns, presented by General T. Hardwicke.

The Arnee, although nearly allied to the Bhainsa, or Buffalo, is enumerated by Mr. Hodgson as a distinct species.

Genus GAVAEUS, *Hodgson, Journ. As. Soc. Beng. XVI. pt. II. p.* 705.

BOVIS Species, *Pennant, Lambert, Colebrooke, et al.*

262. *GAVAEUS FRONTALIS*, *Lambert, Sp.*

Bos frontalis, *Lambert, Trans. Linn. Soc. VII. p.* 57, *tab.* 4.

Bos Gavaeus, *Colebrooke, Asiat. Research. VIII. p.* 487, *with a figure.*

Bos Gavæus or Gyal of Sylhet, *Hodgson, Journ. As. Soc. Beng. X.* 455, *with a good figure of the Skull and horns.*

Gaveus Gavi, or Gabi, *Hodgson, Journ. As. Soc. Beng. XVI. pt. II. p.* 705.

Bos Bubalus Guavera, *Pumont, Quadr. I. p.* 31. *Dr. F. (Buchanan) Hamilton, MS.*

GAYAL, or GIYAL, of the Bengalese of Chittagong, *Hamilton and Colebrooke.*

GABAY BICHAL, the male, and GABAY GYE, the female, of the Bengalese of Silhet, *Hamilton, MS.*

GAVI or GABI, *Hodgson.*

Bunnoorea Ghooroo, of the Assamese, *Walker*.

Several other native synonyms are enumerated by Mr. Colebrooke.

Hab. The range of mountains forming the eastern boundary of Aracan, Chittagong, Tipura, and Silhet, *Colebrooke*. Assam, *Walker*.

A. A Drawing from Dr. F. (Buchanan) Hamilton's Collection. Referred to by J. E. Gray, Esq., Knowsley Menagerie, p. 48.

In the eighth volume of the Asiatic Researches (Art. X. p. 487), H. T. Colebrooke, Esq. gives a very detailed account of the Gayal, compiled chiefly from the observations contributed by Dr. Roxburgh and Mr. Macrae, of Chittagong. It contains much original and interesting information respecting the habits, form, peculiarities, and distribution of this animal, with a full enumeration of its native names in the different provinces eastward of Bengal.

Dr. F. (Buchanan) Hamilton, in the MS. notes which accompany his series of drawings of Indian Mammalia, likewise describes the Gayal, with many additional details, of which the following is an extract :—

" In the hills which form the eastern boundary of Bengal, this animal is common, and it is also found in Ceylon and in the mountains of Malabar, especially in those north from Paligaut. The rude inhabitants of the hills on the frontiers of Bengal consider the Gyal as their most valuable property. Its milk is remarkably rich, and its flesh affords them their most luxurious feast. These people have tame Gyals, which occasionally breed; but the greater part of their stock is bred in the woods, and caught; after which, being a mild animal, it is easily domesticated. The usual manner employed to catch the full-grown Gyal is to surround a field of corn with a strong fence; one narrow entrance is left, in which is placed a rope with a running noose, which secures the Gyal by the neck as he enters to eat the corn; of ten so caught, perhaps three are hanged by the noose running too tight, and by the violence of their struggling. Young Gyals are caught by leaving in the fence holes of a size sufficient to admit a calf, but which excludes the full-grown Gyal; the calves enter by these holes, which are then shut by natives who are watching, and who secure the calves. The Gyal usually goes in herds of from twenty to forty, and frequents dry valleys, and the sides of hills covered with forests."—(Hamilton's MS.)

Genus Bibos, *Hodgson, Journ. As. Soc. Beng. VI. p.* 499 ; *X. I. pt. p.* 469, *II. pt. p.* 911 ; *XVI. II. pt. p.* 706.

Bovis Species, *Elliot, Smith, Gray, Trail, et al.*

263. *BIBOS CAVIFRONS*, *Hodgson, Journ. As. Soc. Beng. VI.* 749 ; *X.* 469, 911 ; *XVI. pt. II.* 706.

Bibos subhemachalanus, *Hodgson, J. A. S. B. VI. p.* 499.
Bibos Gaurus, *Hodgson, Gray, Knowsley Menagerie*, 48.
Bos (Bibos) cavifrons, *Elliot, Madr. Journ. Lit. Sc. X. p.* 227, *with a figure, and ample description.*
Bos Gour, *Trail, Edinb. Phil. Journ.* 1824, 334. *Hardw., Zool. Journ. III. p.* 232, *pl. VII. fig.* 2.
Bos Gaurus, *Ham. Smith. Griffith, An. Kingd. V.* 373.
Gauri Gau, or Gaur, Nepal, *Hodgson.*
Jungli Khoolga, Dekhani. Gaviya, Mahratta, *Elliot.*

Hab. Nepal Forest, *Hodgson.* Cape Comorin to the Himalayas, *Elliot.*

A. Skull and horns from Nepal, presented by B. H. Hodgson, Esq.

B. Skull and horns from Madras, presented by Dr. S. T. Christie.

Specific character.—" Large wild Indian Bibos, with fine short limbs ; short tail, not reaching to the houghs ; broad fan-shaped horizontal ears ; smooth glossy hair, of a brown, red, or black colour, paled upon the forehead and limbs ; tufted knees and brows, and spreading green horns, with round incurved black tips, and with soft rugous bases, furnished posteally with a fragrant secretion."—(Hodgson, J. A. S. B. VI. p. 748.)

264. *BIBOS ASSEEL*, *Horsfield.*

Bos Gayæus, *Hardwicke, Zool. Journ. III. p.* 233, *with figure of the Skull, pl. VII.* 1.
Bos frontalis, *Gray, Cat. Mamm. Br. Mus. p.* 152.
Bos Gaurus, *Blyth* (?) female, *Journ. As. Soc. Beng. XI. p.* 445.
Asseel Gayál, *Hardwicke, Zool. Journ. III. p.* 233, *pl. VII. fig.* 1.
As'l Gayal, of the Hindus in Chittagong, *Macrae, As. Res. VIII. p.* 495.

Seloï, of the Cucis, or Kookies, *Macrae*.
P'hanj, of the Mugs and Burmas, *Macrae*.
? F'hain, *Helfer*.
? Paung, *Judson's Burmese Dictionary*.
? Sénbór, vel Phain, *Hodgson, J. A. S. B. XVI. p.* 706.

Hab. South-eastern Frontier of Bengal and Silhet, *Hardwicke, Macrae*. Tenasserim, *Helfer* (?).

A. A Skull, with horns, presented by General T. Hardwicke.

The name of *Asseel*, by which this animal is distinguished by the natives of eastern India, indicates their notions of its character. The meaning of the term is *original, noble*, or *untamed*. General Hardwicke states that "the natives make a great distinction between the wild and domesticated Gayal." The only authentic account of the wild species hitherto communicated to the public, is contained in General Hardwicke's paper "On the Bos Gour of India," in the third volume of the Zoological Journal, where he informs us that "the provinces of Chittagong and Sylhet produce the *wild*, or, as the natives term it, the *Asseel-Gayál*, and the domesticated one. The former is considered an untameable animal, extremely fierce, and not to be taken alive. It rarely quits the mountainous tract of the south-east frontier, and never mixes with the Gobbah (Gabay), or village Gayál of the plains. I succeeded in obtaining the skin, with the head of the *Asseel Gayál*, which is deposited in the Museum of the East-India Company, and from this the drawing was taken which accompanies that of the horns of the Gour." This account of the habits of the *Asseel Gayal* is confirmed by Mr. Macrae, who informs us, in the Asiatic Researches (vol. VIII. p. 495), that the natives of the south-east provinces "consider him, next to the tiger, the most dangerous and the fiercest animal of their forests."

The specimen of the *Bibos Asseel*, when presented to the Company's Museum, was covered with its natural hide, and was generally considered as the head of the *Gavaeus frontalis*; but by the removal of the covering the true character is developed, and it is apparent that the animal to which it belonged is more nearly related to the *Bibos cavifrons* than to the *G. frontalis*.

In placing the skulls of the Gour and Asseel together for comparison, the following more prominent differences were observed:—In the Gour the skull is very massive, broad above, and gradually attenuated

towards the nose. The intercornual crest is elevated, bold, arched, and overhanging the forehead, which is deeply concave. The orbits are massive, salient, and give to the eyes a somewhat lateral direction. The nasal bones are comparatively large, lengthened, depressed at their junction with the frontal bones, convex in the middle, with a lateral concavity on each side; the medial suture is only indicated by an indented line; the suture which, in the ox, divides the frontal bone through its entire length, extends only about two inches above the nasal bone.

In the Asseel the skull above has nothing of the massiveness belonging to the Gour. Its general form is more oblong, narrow, regular, and resembling that of the common ox. The intercornual crest is slightly arched, but not massive or overhanging, and passes into a very slight frontal concavity. The orbits are not salient, and give the eye a more anterior direction. The nasal bones are narrow, slightly convex, not depressed at their junction with the frontal bone, and divided by a distinct medial suture, which is continued through more than half of the frontal bone. The direction of the sutures by which the separate bones composing the skulls respectively are divided, varies considerably in the Gour and Asseel.

The horns in the Gour are of extraordinary dimensions, and very roughly grooved transversely. In the Asseel they are comparatively slender; they are inserted at the sides of the ridge which separates the front from the occiput. At the base they are irregularly triangular and cylindrico-compressed; they rise with a curve, having an outward or lateral direction to about half-way of their length; they then bend inward, with a slight flexure backward, giving the points an oblique posteal direction; the basal part is wrinkled on all sides. The medial and terminal surfaces are smooth; they measure, along the exterior flexure, twenty inches.

265. *BIBOS BANTENG*, *Gray, Knowsley Menagerie, p.* 48.

Bos Sondaicus, *Schlegel en Müller, over de Ossen von den Indischen Archipel. Verhandl. over de Natuurl. Gesch. &c. p.* 195.

Banteng, of the Javanese, to which the Dutch add the terminal *er* (Bantenger), to suit the idiom of their language.

Hab. Java and Borneo.

A. Horns on frontal bone, presented by the Asiatic Society of Bengal.

Genus POEPHAGUS, *Gray, Cat. Mamm. Br. Mus. Syst. List, XXVI.*

BOVIS Species, *Linn., Erxl., Zimmerm., Pallas, Cuv., et al.*
BISONUS, *Hodgson.*

266. *POEPHAGUS GRUNNIENS, Linn., Sp.*

Bos grunniens, *Linn., Syst. Nat.* 12, *I. p.* 99. *Erxl., Syst. p.* 237. *Zimmerm., G. G. II. p.* 38. *Blumenb., Abbeld. t.* 25. *Cuv., Ossem. fossil.* 4me *éd. VI. p.* 261.

Bos poëphagus, *Ham. Smith, Griffith, An. Kingd. V.* 896. *Pallas, Zool. Ross. Asiat.* 249.

Bisonus poëphagus, *Hodgson, Journ. As. Soc. Beng. XVI. pt. II. p.* 708.

Poëphagus, *Aelian, Anim. XV. et XVI. Fischer, Synops. Mamm. p.* 496.

Grunting Ox, *Pennant and Shaw.*

YAK, of Tartary, *Turner, Asiat. Research. IV. p.* 351.

BUBUL, *Bell's Travels, I. p.* 212.

SOORA-GOY, or bushy-tailed Bull, of Tibet, *Turner, Asiat. Research. IV. p.* 351.

YAK, or CHOURI-GAU, *Hodgson, Journ. As. Soc. Beng. XVI. pt. II. p.* 708.

DONG, Tibetan, *Strachey.*

HAB. Tibet, *Turner.* Ladakh, *Strachey.* High Asia, between the Altai and the Himalaya, the Belut Tag, and the Peling Mountains, *Hodgson.*

A. Specimen of the Yak from the plains of Ladakh, from Capt. R. Strachey's Collection.

B. Specimen of the Hybrid Yak, presented by the Asiatic Society of Bengal.

C. and D. Horns of the Hybrid Yak, presented by the Asiatic Society of Bengal.

E. A Chamar, or state fly-whisk, formed of the hair of a Yak's tail, presented by C. Russell, Esq.

The specimen of the Tibetan Yak from Captain R. Strachey's Collection, exhibited in the Company's Museum, was prepared from a dry skin, in good preservation. In size it is somewhat less than the common or domestic ox. The head is large, and the neck propor-

tionally broad, without any mane or dewlap, having a downward tendency. The horns are far apart, placed in front of the occipital ridge, cylindrical at the base, from which they rise obliquely outward and forward two-thirds of their length, when they bend inward with a semicircular curve, the points being directed to each other from the opposite sides. The muffle is small, the border of the nostrils callous, the ears short and hairy. At the withers there is a slight elevation, but no protuberance or hump, as in the Indian Ox. The dorsal ridge not prominent; body of full dimensions; rump and hinder parts proportionally large; limbs rather small and slender; hoofs smooth, square, and well defined, not expanded, as in the Musk Ox; anterior false hoofs small; posterior large; tail short, not reaching beyond the houghs, naked for some inches at the root, very bushy, lax, and expanded in the middle. Colour, black throughout, but varying in tint according to the character of the hairy covering; this, on the anterior parts, the neck, shoulders, back, and sides, is short, soft, and of a jet black colour, but long, shaggy, pendulous, and shining on the sides of the anterior extremities, and from the medial part of the abdomen over the thighs to the hinder parts.

The general aspect of the specimen is bovine; as to its affinity, in a natural arrangement it is more nearly related to the *Bos taurus*, the common domestic Ox, than to the Gayal (*Bos frontalis*) or the Gour (*Bibos cavifrons*).

The specimen here described was obtained in the high regions of Ladak by chase, and exhibits the Yak in its natural or wild state. The descriptions and figures of Turner and Pennant represent the animal as modified by domestication, or mixture with other bovine species, when the lump on the shoulders is produced, the hair on the upper parts becomes white, and that of the tail long, silky, and pendulous: in which state it is manufactured into chouries, or switches, which are in common use by the natives as brushes or fans against flies. Several individuals of the hybrid race have been brought to England; one of these, presented by Captain Samuel Turner to Warren Hastings, Esq., arrived safe, and lived some time in his Menagerie. This is figured in Turner's Embassy to Tibet; the other is figured in the Proceedings of the Zool. Soc. for 1849, pl. XX., with the following brief explanatory notice: "It was imported from India some four years ago, and appears to be the produce of a Zebu mother and a Yak sire." Mr. Gray refers to this in Knowsley Menagerie, p. 50.

The Yak inhabits the high regions of Tibet and the neighbouring countries. Mr. Hodgson informs us that it cannot live on this side

the Himalayas, beyond the immediate vicinity of the snows (Journ. As. Soc. Beng. XVI. p. 709). Lieut. Wood, as referred to by Mr. Blyth, states, " Wherever the mercury does not rise above zero is a climate for the Yak."—(J. A. S. B. XV. p. 144.)

The Yak is mentioned by writers and travellers from Ælian downwards to the present time, and the details of his sagacity and ferocity when wild, and of its mode of life, use, and capacity of training in a domestic state, are innumerable.

Dimensions.	*Ft.*	*In.*
Length, from the nose to the insertion of the tail......	9	3
Do. of the tail....................................	2	8
Height at the withers................................	4	6
Do. at the croup...................................	4	0
Girth, at the posterior part of abdomen.................	7	0

THE DEER, *Gray, Knowsley Menagerie, p.* 55.

Genus CERVUS, *Linn. et al.*

CERVUS et PSEUDO-CERVUS, *Hodgson, Journ. As. Soc. Beng. X. p.* 914.

267. *CERVUS WALLICHII, Cuv., Ossem. foss.* 4*me éd. VI. p.* 88. *Hodgson, Journ. As. Soc. Beng. XVI. p.* 689. *Gray, Cat. Hodgs. Col. p.* 32 ; *Knowsley Menag. p.* 60.

GIÁNA, *Tibetan, Hodgson.*

HAB. Nepal, Saul forests, *Hodgson.*

A. B. Horns, presented by Dr. Hugh Falconer.

Genus RUCERVUS, *Hodgson.*

CERVI Species, *Cuvier et al.*

268. *RUCERVUS DUVAUCELLII, Cuv., Sp.*

Cervus Duvaucellii, *Cuv., Ossem. foss.* 4*me éd. VI. p.* 89.

Rucervus Duvaucellii (vel elaphoides), *Hodgs. Journ. As. Soc. Beng. XVI. p.* 689. *Gray, Cat. Hodgs. Coll. p.* 33 ; *Knowsl. Menag. p.* 61.

BÁRA-SINHA, vel BURAIYA, Bengal.

HAB. Eastern and northern skirts of Bengal and Hindostan, *Hodgson.*

A. Horns, presented by General T. Hardwicke.

B. Horns, presented by B. H. Hodgson, Esq.

Genus Panolia, *Gray*.

Cervi Species, *McClelland et al.*

269. *PANOLIA ACUTICORNIS*, *Gray, Cat. Mamm. Br. Mus. p.* 180.

Panolia Eldii, *Gray* (Eadii, err. typ. corrigend.), *Cat. Hodgs. Coll. Br. Mus. p.* 34. *Knowsl. Menag. p.* 61.

Cervus (Rusa) frontalis, *McClelland, Calc. Journ. Nat. Hist. III. p.* 401, *pl. XIII. and XIV. with figures of the animal and of the horns separately.*

Indication of a nondescript species of deer, *by John McClelland, Calc. J. N. H. I. p.* 501.

Further notice of a nondescript deer, *by Lieut. Eld, Calc. Jour. N. H. II. p.* 415, *with figures of the horns.*

Cervus Eldii, *Ed., C. J. N. H. II. p.* 417, *proposed in honour of Lieut. Eld, who discovered this species.*

Sungraee, and Sungnai, *Eld and McClelland.*

Hab. Valley of Munipore, *McClelland, Lieut. Eld.* Malayan peninsula, *Cantor.*

A. A prepared specimen, presented by John McClelland, Esq.

Genus Rusa, *Ham. Smith, Hodgson, et al.*

Cervi Species, *Linn., Cuv., Müller, et al.*

270. *RUSA EQUINA*, *Cuv., Sp.*

Cervus equinus, *Cuv., Ossem. foss.* 4me *éd. VI. p.* 92. *Schlegel and Müller, Over de Herten, v. d. Ind. Archip.*; *Verhandl. over Nat. Gesch. p.* 213. *Sykes, Catal. Dukhun Mamm. p.* 12. *Bennett, Tower Menagerie, p.* 185.

Rusa equina, *Gray, Cat. Mamm. Br. Mus.* 179 ; *Knowsley Menag. p.* 62.

Cervus (Rusa) Hippelaphus, *Elliot, Catal. Mamm. S. Mahratta, &c.*

Rusa etam, or Rusa Kumbang, of the inhabitants of Sumatra, *Raffles.*

Sambur, of the Mahrattas, *Sykes and Elliot.*

Sambara, Sans.

Samboo Deer, *Bennett.*

Hab. Dukhun, *Sykes.* Southern Mahratta Country, *Elliot.* Sumatra, *Raffles.* Sumatra, Bornéo, Banka, *Müller.*

A. A prepared skin, not perfect. Presented by Colonel Sykes.

B. A specimen, not perfect. Presented by Sir T. S. Raffles.

C. Horns, presented by Colonel Sykes.

271. *RUSA HIPPELAPHUS, Cuv., Sp.*

Cervus Hippelaphus, *Cuv. Ossem. foss.* 4me *éd. VI. p.* 77.
Rusa Hippelaphus, *Gray, Cat. Br. Mus. p.* 179 ; *Cat. Hodgs. Coll. p.* 33. *Knowsl. Menag.* 62.
Sámber, *Journ. As. Soc. Beng. XVI. p.* 690.

HAB. Forests of India, *Hodgson.*

A. Horns, presented by B. H. Hodgson, Esq.

272. *RUSA ARISTOTELIS, Cuv., Sp.*

Cervus Aristotelis, *Cuv. Ossem. fos.* 4me *éd. VI. p.* 84.
Rusa Aristotelis, *Gray, Cat. Mamm. Br. Mus. p.* 179. *Knowsl. Menag.* 62.
JARAI (vulgo JERROW), *Hodgson, Journ. As. Soc. Beng. XVI. p.* 690.

HAB. Great Forests of India, *Hodgson.* Ceylon.

A. B. C. Horns, presented by Dr. Hugh Falconer.

Genus AXIS, *Ham. Sm., Gr. A. K.* 1827.

CERVI Species, *Linn., Erxl., Cuv. et al.*

273. *AXIS MACULATA, Gray, Catal. Mamm. Br. Mus.* 178.

Cervus axis, *Erxl., Elliot.*
CHITTAL, *Hodgson, Elliot.*
CHITRA, Sans.
The spotted Deer.

HAB. Continental India, *Hodgson.* Southern Mahratta country, *Elliot.* Malayan peninsula, *Cantor.*

A. A prepared specimen, presented by the Asiatic Society of Bengal.

B. Horns, presented by W. S. Clarke, Esq.

C. A Drawing, Dr. F. (Buchanan) Hamilton's Collection.

Genus Hyelaphus, *Sundev.* *Gray, Knowsley Menagerie.*

Axis, *Hodgson, et al.*
Cervi Species, *Linn., Zimmerm., et al.*

274. ***HYELAPHUS PORCINUS***, *Sundev. Pecora,* 58. *Gray, Knowsley Menag. p.* 64.

Cervus porcinus, *Zimmerm., Geogr. Gesch. II. p.* 151.
Axis (Cervus) niger, *Dr. F. (B.) Ham. (Black Variety).*
Párá, or Khar, Laghuna, or Súgoria, *Hodgson, Journ. As. Soc. Beng. XVI. p.* 691.
The Hog Deer.

Hab. Continental India, *Assam, McClelland.*

A. From Surgeon McClelland's Collection in Assam.
B. Horns, presented by General T. Hardwicke.
C. A Drawing, from Dr. F. Buchanan's Collection.
D. A Drawing of the Black Variety, from Dr. F. (B.) Ham.'s Collection.

Genus Cervulus, *De Blainv.*, 1816.

Cervi Species, *Linn., Schreb., Zimmerm., et al.*
Muntjaccus, *Gray.*
Stylocerus, *Ham. Smith.*
Prox, *Ogilby, Sundev.*

275. ***CERVULUS VAGINALIS***, *Bodd. Sp. Elench. Anim. I.* 136.

Cervus Muntjac, *Zimmerm., Geogr. Gesch. II. p.* 131. *Linn., Syst. Nat. ed. Gmel. Horsf., Zool. Research. Schlegel and Müller, Verhandl. over N. G.* 225.
Cervulus vaginalis, *Gray, Knowsley Menag. p.* 65.
Kidang, of the Javanese.
Muntjak, of the Sundanese.
Kijang, of the Malays of Sumatra, *Marsden's Hist. of Sumatra.*

Hab. Java, *Horsfield.* Java, Sumatra, Banka, and Borneo, *Müller.*

A. From Horsfield's Collection in Java.

276. *CERVULUS MOSCHATUS*, *De Blainv., Bull. Soc. Phil.* 1816, 77. *Gray, Knowsley Menag.* 65.

Cervus Muntjak, *Sykes, Catal. Dukhun Mamm.* *Elliot, Cat. Mamm. Southern Mahratta Country.*

Stylocerus Ratwa, *Hodgson, Journ. As. Soc. Beng. X.* 914. *XVI.* 692.

RATWA, and KAKER, of the Indian continent, *Hodgson.*

BAIKER, of the Mahrattas, *Sykes.*

BEKRA, Mahratta, *Elliot.*

BARKING DEER, of Europeans, *Hodgson.*

Rib-faced Deer, *Pennant, Quad. I. p.* 119.

HAB. The plains of Continental India.

A. From Capt. R. Strachey's Collection in Kumaon. Female.

B. Horns, presented by B. H. Hodgson, Esq.

C. Horns, presented by J. McClelland, Esq.

D. E. Two dried Skins from Colonel Sykes' Collection. Defective.

F. Drawing of the Head, from Dr. F. (Buchanan) Hamilton's Collection.

The specific distinction between *Cervulus vaginalis* and *Cervulus moschatus* is by no means strongly marked. Messrs. Schlegel and Müller (Verhandl. over Natuurl. Gesch. p. 225) consider them specifically the same. Mr. Hodgson, in his Classified Catal. of Mamm. of Nepal, enumerating *Stylocerus Ratwa*, states, "Probably identical with the insular type, or *Cervus Munjac.*"—(J. A. S. B., X. p. 914.)

Fam. 2. EQUIDÆ, *Gray, Cat. Mamm. Br. Mus. Syst. List, XXVII.*

THE HORSES, *Gray, Knowsley Menagerie, p.* 70.

Genus ASINUS, *Gray.*

EQUI Species, *Moorcroft et al.*

277. *ASINUS KIANG*, *Moorcroft, Sp.* *Gray, Knowsley Menagerie, p.* 72.

Equus Kiang, *Moorcroft, Travels, &c. I. p.* 312.

Asinus polyodon, *Hodgson, Calcutta Journ. Nat. Hist. VII. p.* 472.

? Var. E. Hemioni, *Pallas, in Nov. Comm. Petrop. XIX. p.* 394.

The Kiang, *Walker, Journ. As. Soc. Beng. XVII. pt. II. p.* 1, *with a figure.*

Kiang, or Kyang, of the inhabitants of Ladakh, *Moorcroft, Strachey.*

Hab. Tibet, Ladakh, *Moorcroft, Strachey.*

A. Capt. R. Strachey's Collection in Ladakh.

Several varieties, or species (?), of the Wild Ass are enumerated by Indian travellers and zoologists, whose history and character remain for future determination: namely, the *Dziggetai*, or *Equus hemionus*, of Pallas; the *Gurkhor*, or *Ghorkhur* (*Quere* from "*Ghora*," a horse, and "*Khur*," an ass, literally "*Equus asinus*," Hutton, J. A. S. B., XV. p. 146); the *Wild Ass*, of Kutch and the Indus; and the *Kiang*, or *Kyang*, of the plains of Tibet.

By Mr. Gray (Knowsley Menagerie, p. 71), Colonel Sykes (Proceed. Zool. 1837, p. 91), and several other Zoologists, the Ghorkhur is considered identical with the *Equus hemionus* of Pallas. In his account of the Kiang (Journ. As. Soc. Beng. XVII. p. 2), Dr. H. Walker asserts that the Kiang is the same animal as the Dziggetai of Pallas. In some remarks in Capt. Hutton's "Notes on the Zoology of Candahar," Mr. Blyth informs us that his doubts on the identity of the "Kyang" of Tibet with the Ghorkhur, were completely settled in the affirmative by a specimen of the Kyang which the Society received from G. T. Lushington of Almorah (J. A. S. B. XV. p. 146); whereas Moorcroft (Travels, I. p. 312) states, "in the eastern parts of Ladakh is a nondescript wild variety of horse, which I may call *Equus kiang*. It is perhaps more of an ass than a horse, but its ears are shorter, and it is certainly not the Gur-khor or Wild Ass of Sindh."

In the same volume, p. 442, Moorcroft communicates some further remarks. "We saw many large herds of the Kiang, and I made numerous attempts to bring one down, but with invariably bad success. Some were wounded, but not sufficiently to check their speed, and they quickly bounded up the rocks, where it was impossible to follow. They would afford excellent sport to four or five men well mounted, but a single individual has no chance. The Kiang allows his pursuer to approach no nearer than five or six hundred yards; he then trots off, turns, looks, and waits until you are almost within distance, when he is off again. If fired at he is frightened, and scampers off altogether.

The Chan-than people sometimes catch them by snares, sometimes shoot them. From all I have seen of the animal, I should pronounce him to be neither a horse nor an ass. His shape is as much like that of the one as the other, but his cry is more like braying than neighing. The prevailing colour is a light reddish-chesnut, but the nose, the under part of the lower jaw and neck, the belly, and legs, are white; the mane is dun and erect; the ears are moderately long; the tail bare, and reaching a little below the hock; the height is about fourteen hands. The form, from the fore to the hind leg and feet, to a level with the back, is more square than that of an ass; his back is less straight, and there is a dip behind the withers, and rounding of the crupper, which is more like the shape of the horse; his neck is also more erect and arched than that of the ass. He is, perhaps, more allied to the Quagha, but without stripes, except a reported one along each side of the back to the tail. These were distinctly seen in a foal, but were not distinguished in the adults."

Fam. 3. ELEPHANTIDÆ, *Gray, Cat. Mamm. Br. Mus. Syst. List, XXVII.*

a. ELEPHANTINA.

Genus ELEPHAS, *Linn. et al.*

278. *ELEPHAS INDICUS*, *Linn.*

The ELEPHANT.
HASTI, Sanscrit, Bengali, &c.
HATHI, Hindustani, from the Sans. *Hasti.*
GAJ and GUJ, Bengali, &c., from Sans. *Gaja.*
GÁDJAH, Malayan.

A. Skull of a male Elephant.
B. Skull of a female Elephant.
C. Skull of a young Elephant.
D. Skull of a fœtus.
E. and F. Sections of grinders.
Presented by John (Corse) Scott, Esq. Described by John Corse, Esq. (Phil. Trans. 1799, II. 205.)
Two sets of the grinders of the Asiatic Elephant, presented by John McClelland, Esq.

b. TAPIRINA.

Genus TAPIRUS, *Briss. et al.*

279. *TAPIRUS MALAYANUS*, *Raffles, Horsfield.*

Tapirus indicus, *Fred. Cuv., Müller.*

The Malayan Tapir.

KUDA-AYER, of the Malays.

SALADANG, of the Limun's in Sumatra.

GINDOL, of the Manna's in Sumatra.

BABI-ALU, interior of Bencoolen.

TENNU, at Malacca.

HAB. Malayan peninsula and Sumatra, *Raffles.* Sumatra, Borneo, *Müller.*

A. Presented by Sir T. S. Raffles.

c. SUINA.

Genus SUS, *Linn. et al.*

280. *SUS SCROFA*, *Linn. Var. Indica, Elliot, Mammalia of South Mahr. Country, Madras Journ. X.* 219. *Sykes, Cat. Dukhun Mamm, p.* 11.

Sus aper, *Hodgs., Classif. Cat. Nep. Mamm. J. A. S. Beng. X. p.* 911, *two varieties.*

The Indian Wild Boar.

BARÁHA, Sans., Beng.

JANGLI SÚR, Hindust.

SUR, Dekhani, *Elliot.*

DOOKUR, Mahratta, *Sykes, Elliot.*

HAB. India generally.

A. Skull of the Indian Wild Boar.

"Wild Hogs abound in Dukhun, and the males attain to a very great size. I am not satisfied that there is any specific difference between the European and Asiatic Wild Hog."—(Sykes, Cat. Dukhun Mamm. p. 11.)

Genus BABIRUSSA, *Fr. Cuv., Dents d. Mammif.* 1825.

SUS, *Linn. et al.*

281. *BABIRUSSA ALFURUS*, *Lesson, Man.* 338.

Sus babyrussa, *Linn., Syst. Nat.* 12, *I. p.* 104.

BABI-RUSA, of the Malays; literally, *Babi,* Hog; *Rusa,* Deer.

HAB. The island of Buru (Bourou Fr.), one of the Moluccas, *Bontius, Müller.* Celebes, Buru, and Ternate, *Müller.*

A. The skull, presented by Dr. Roxburgh.
B. The skull, presented by G. Stevens, Esq.

Genus PORCULA, *Hodgson.*

SUIDÆ, genus Porcula, mihi, *Hodgson, Journ. As. Soc. Beng. XVI. p.* 423.

Generic Char.—Teeth $\frac{6}{6}.\frac{1\cdot1}{1\cdot1}.\frac{6\cdot6}{6\cdot6}=40$. Canines small, straight, severely cutting, but not ordinarily exserted from the lips. Fourth toe on all the feet small and unequal. Tail very short, but distinct.

Specific Char.—Pigmy Hog, of a black-brown colour, slightly and irregularly shaded with sordid amber. Iris hazel; nude skin, dirty flesh-colour. Hoofs, glossy brown. Length, from snout to vent, 18 to 20 inches. Height, 8 to 10 inches. Weight, 7 to 10, rarely 12 lbs.

282. *PORCULA SALVANIA, Hodgson, J. A. S. B. loc. cit.; Ann. and Mag. Nat. Hist. N. S. III. p.* 202.

Pigmy Hog of the Saul Forest.
SÁNO BANEL, and CHÒTA SÚVAR, of the natives, *Hodgson.*

HAB. Saul Forest.

A. Presented by B. H. Hodgson, Esq.

In the sixteenth volume of the Journ. As. Soc. of Bengal, as above cited, Mr. Hodgson gives a detailed description of the form, habits, and peculiarities of this animal, with a figure; and in the seventeenth volume, p. 476, of the same Journal, some additional remarks on its anatomy. The following is a short extract from Mr. Hodgson's interesting account:—"The Pigmy Hog is exclusively confined to the deep recesses of primeval forest, and hence (I believe) has entirely escaped all notice of Europeans up to the present hour; and whereas, again, the grown males of the common Hog invariably dwell apart, those of the Pigmy Hog abide constantly with the herd, and are its habitual and resolute defenders against harm. I obtained my single specimen recently in the Tarai of Sikim; but I know that the species dwells also in the Tarai of Nepaul; nor have I any doubt it inhabits as far north-west and south-east as the Saul Forest extends; though, such are its rarity and secludedness, that, knowing of its existence and anxious to procure it as I have been for fifteen years past, I have only just succeeded. Even

the aborigines, whose home is the forest, seldom see, and still seldomer obtain it, much as they covet it for its delicious flesh, and eagerly as they search for it on that account; and an old Mech, who brought me mine, informs me that in fifty years' abode in the Sál-bári, or Saul Forest, though a hunter every season, he never got but three or four of these much-desiderated animals to eat, partly owing to their scarcity, and partly to the speed with which the female and young disperse, and to the extraordinary vigour and activity with which the males defend themselves whilst their families are retreating."

d. RHINOCERINA.

Genus RHINOCEROS, *Linn. et al.*

283. *RHINOCEROS SONDAICUS*, *Cuv. Horsf., Zool. Res., with a figure. Müller.*

Rhinoceros javanicus, *Cuv. et Geoffr., Mamm. fasc.* 46.
WARAK, Javanese.
BADAK, Malayan.

HAB. Java exclusively, *Horsfield, Müller.*

A. A Drawing, Horsfield's Collection from Java.

284. *RHINOCEROS UNICORNIS*, *Linn.*

Single-horned Rhinoceros, *Shaw, Gen. Zool.* 1, *I. p.* 198.
GOR, of the Assamese, *Walker.*

HAB. Continental India, Malayan Peninsula, *Cantor.*

A. Horn, presented by Edw. Smith, Esq.*

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* The wild Rhinoceros from which this horn was taken was about the size of a small Elephant; he was shot by Mr. Thomas Craigie, at a small distance from Gwalpara, on the borders of Assam, in the year 1777. The animal had been discovered asleep near to the place where Mr. Craigie was on a visit, and though dissuaded from the rash attempt, he would go out to attack the beast, being armed with a gun, and having a pistol in his belt: three gentlemen were present on horseback—he went on foot. He approached to within about thirty feet of the animal, whom he aroused by firing at him his pistol; the beast instantly got up to see from whence he was attacked, but just as he was prepared to make his charge, Mr. Craigie (having knelt down on one knee) levelled his piece, and the ball entered the head just between the eyes; the beast rushed forward, but Mr. Craigie avoided him by springing on one side, and the animal fell dead near the spot where he had knelt.

285. *RHINOCEROS AFRICANUS*, *Desmar., Mamm.*

Rhinoceros bicornis, *Linn.*

African Rhinoceros.

A. Anterior horn, presented by Colonel Taylor.

Genus HYRAX, *Herm. Tab. Aff. Illustr.*

286. *HYRAX ABYSSINICUS*, *Hemp. et Ehrenb., Sym. Phys.*

ASHKOKO, Abyssinian, *Bruce.*

A. From Sir W. C. Harris's Collection in Abyssinia.

Fam. 4. DASYPIDÆ, *Gray, Cat. Mamm. Br. Mus. Syst. List, XXVII.*

a. MANINA.

Genus MANIS, *Linn. et al.*

287. *MANIS PENTADACTYLA*, *Linn., Syst. Nat.* 12, *I. p.* 52.

Manis crassicaudata, *Griff., A. K. III. p.* 507. *Sykes, Cat. Dukh. Mamm. p.* 11. *Elliot, Mamm. S. Mahr. Madr. Journ. X.* 218.

Manis macroura, *Desm., Mamm. p.* 376. *Lesson, Man. p.* 316.

Manis brachyura, *Erxl., Gray, and Hardw., Illust. Ind. Zool. II. tab.* 22.

Broad-tailed Manis, *Penn., Quadr. II.*

KUSOLEE MANJUR, or Tibet Cat, of the Mahrattas, *Sykes.*

BUJJERKEET, Sansc., Hind., *Tickell.*

KOWLI MAH, Mahratta, of the Ghats, *Elliot.*

Pangolin à queue courte, *Cuv.*

HAB. India generally, *Sykes, Elliot, Hodgson.*

A. Presented by Colonel Sykes.

B. Presented by Matthew Lovell, Esq.

C. Young.

A detailed account of the structure, habits, peculiarities, and local names in different parts of Hindustan, is given in the eleventh volume of the Journ. As. Soc. Beng. pt. I. p. 221, &c., by Lieut. R. Tickell, Pol. Ass. S. W. Frontier.

288. *MANIS JAVANICA*, *Desmar., Mamm. p.* 377. *Müller, Verh. over N. G. p.* 37.

Manis pentadactyla, *Raffl., Trans. Linn. Soc. XIII. p.* 249.
TANGILING, Javanese. PANGOLING-SISIK, Sumatra, *Raffles.*

HAB. Java, Sumatra, Borneo.

A. B. Adult. Horsfield's Collection from Java.

C. Young. From the same.

The habits of the Javanese Manis are thus described by Dr. Sal. Müller :—" It lives chiefly in forests, and prefers mountainous districts. A peculiar feature in its habits is, that it ascends trees, and conceals itself in fissures, selecting especially several species of the wild fig-tree. It is less frequently found in cavities of rocks. In naked tracts it burrows in the earth, often to a considerable extent, in search of white and other ants, which are its chief food, although it also pursues insects and worms. Its flesh is freely eaten by the natives, and of the scales they form rings and amulets."—(Verhandl. over Nat. Gesch. &c. p. 37.)

e. ORNITHORHYNCHINA.

Genus ORNITHORHYNCHUS, *Blumenbach, Voigts. Mag. II.* 1800.

PLATYPUS, *Shaw, Nat. Misc.* 118, 1799.

289. *ORNITHORHYNCHUS PARADOXUS*, *Blumenb., Handb.* 10, *p.* 135.

Platypus anatinus, *Shaw.*

HAB. Australia and Van Diemen's Land.

A. Presented by John Reeves, Esq.

SYSTEMATIC LIST

OF THE

GENERA AND SPECIES

OF

MAMMALIA

CONTAINED IN

THE MUSEUM OF THE EAST-INDIA COMPANY.

CLASS MAMMALIA.

Order I. PRIMATES.

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